

FIG. 1

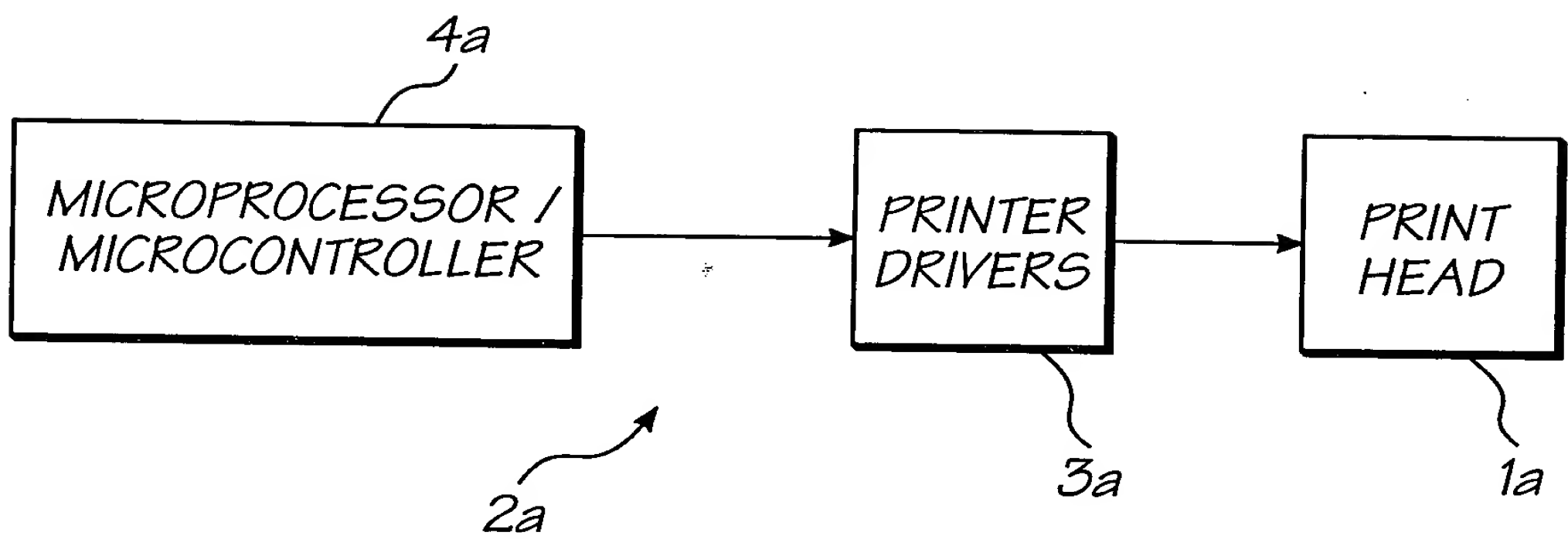


FIG. 1A  
(PRIOR ART)

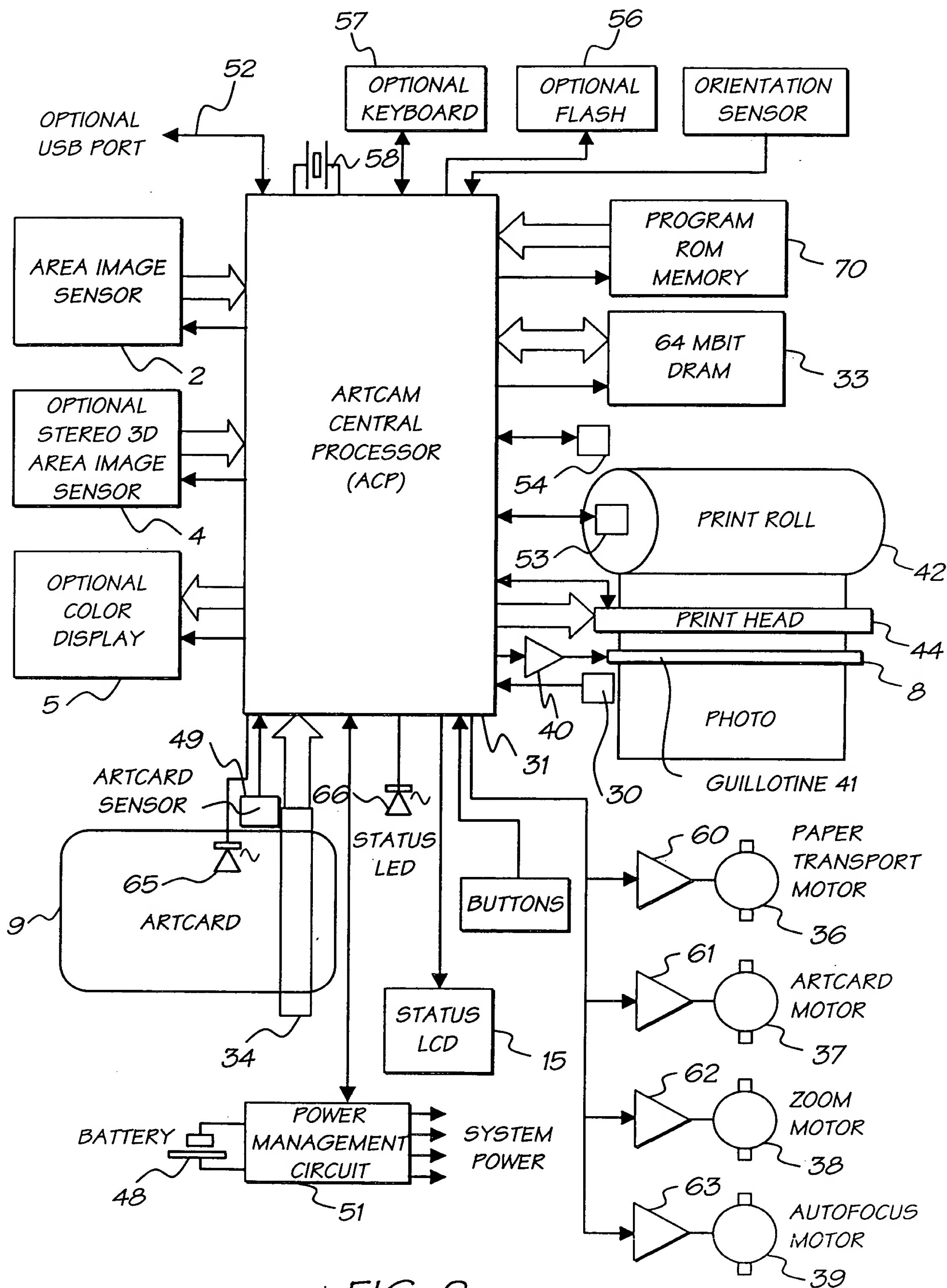


FIG. 2

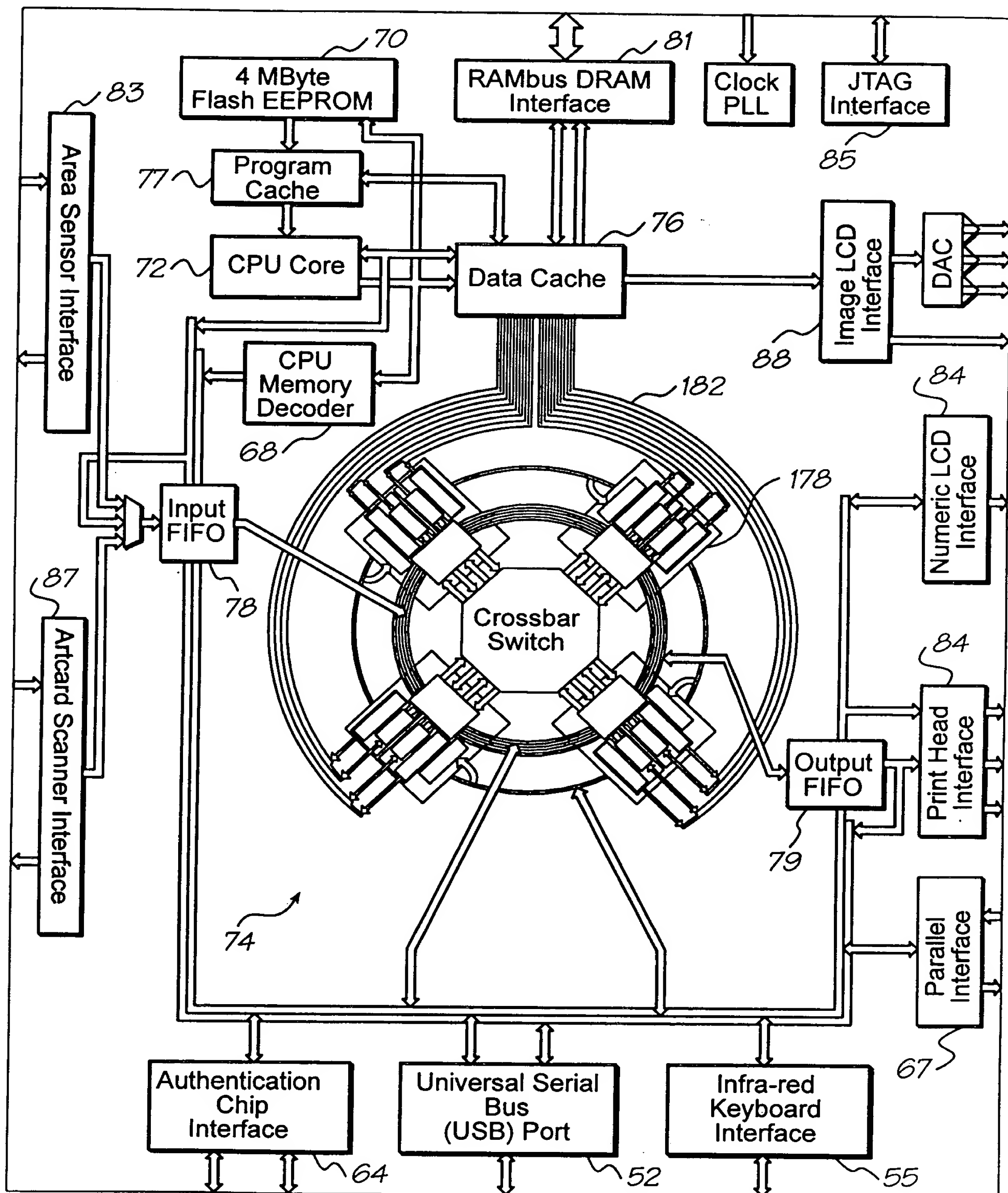


FIG. 3

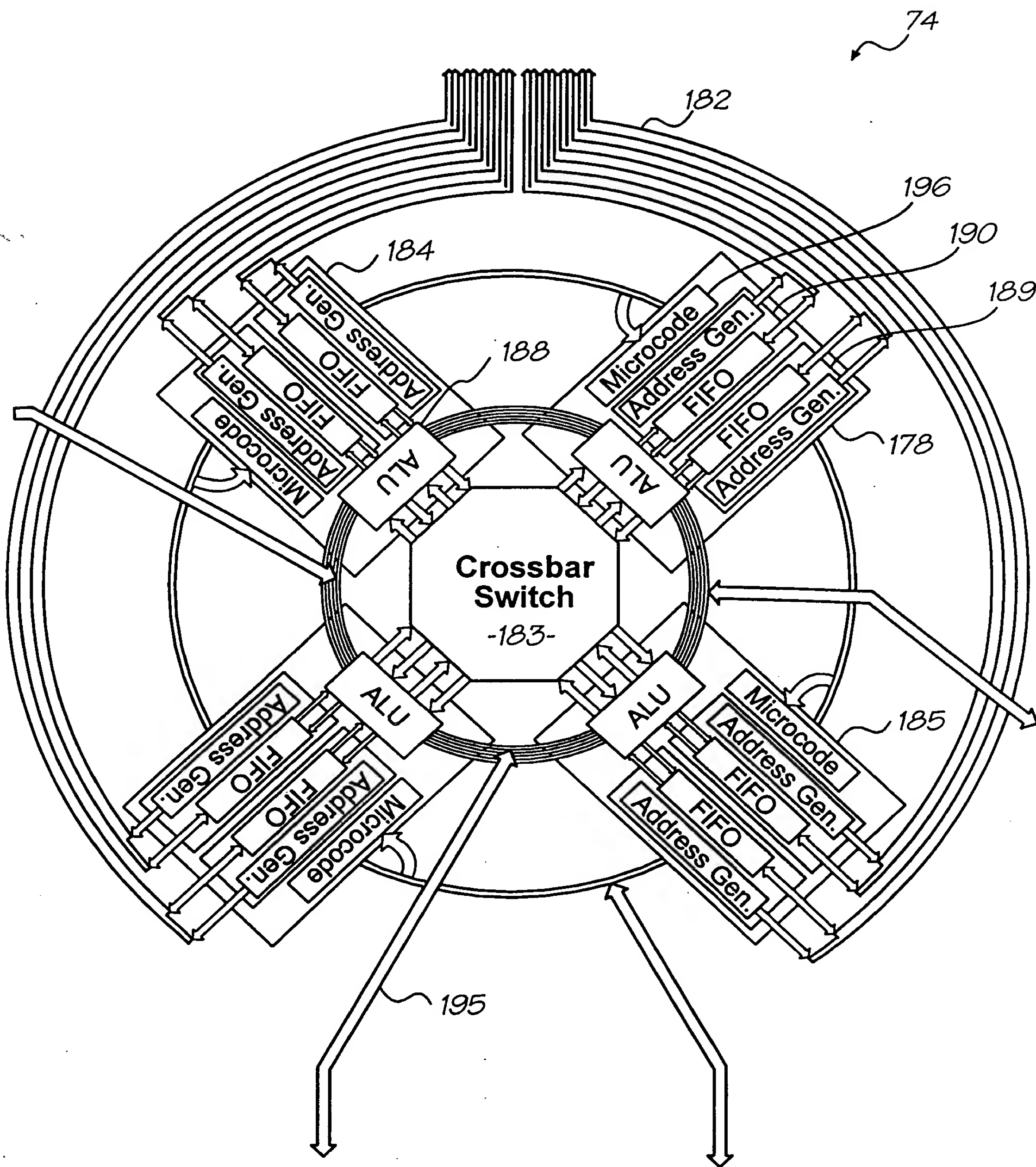


FIG. 3(a)

FIG. 4

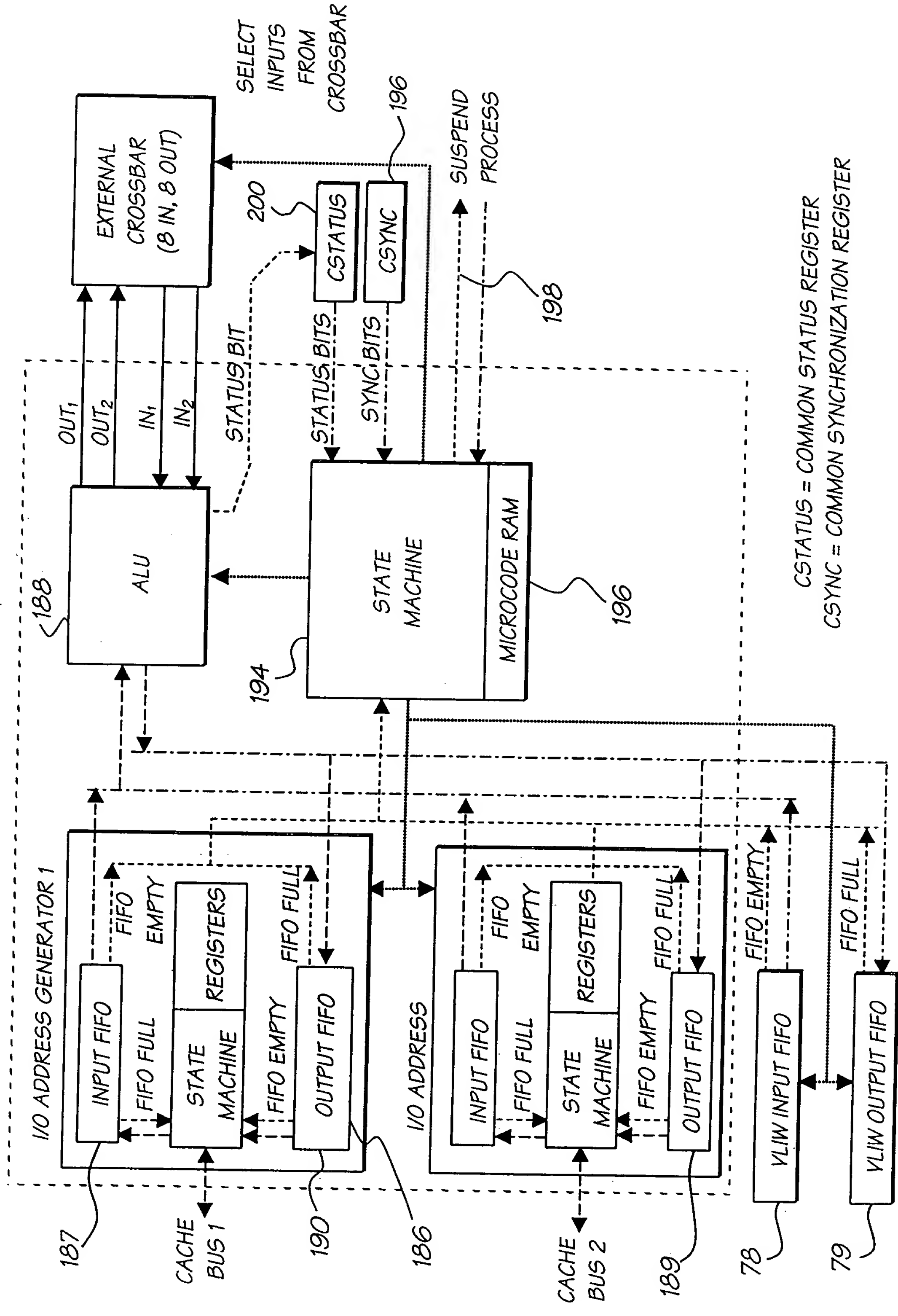


FIG. 4

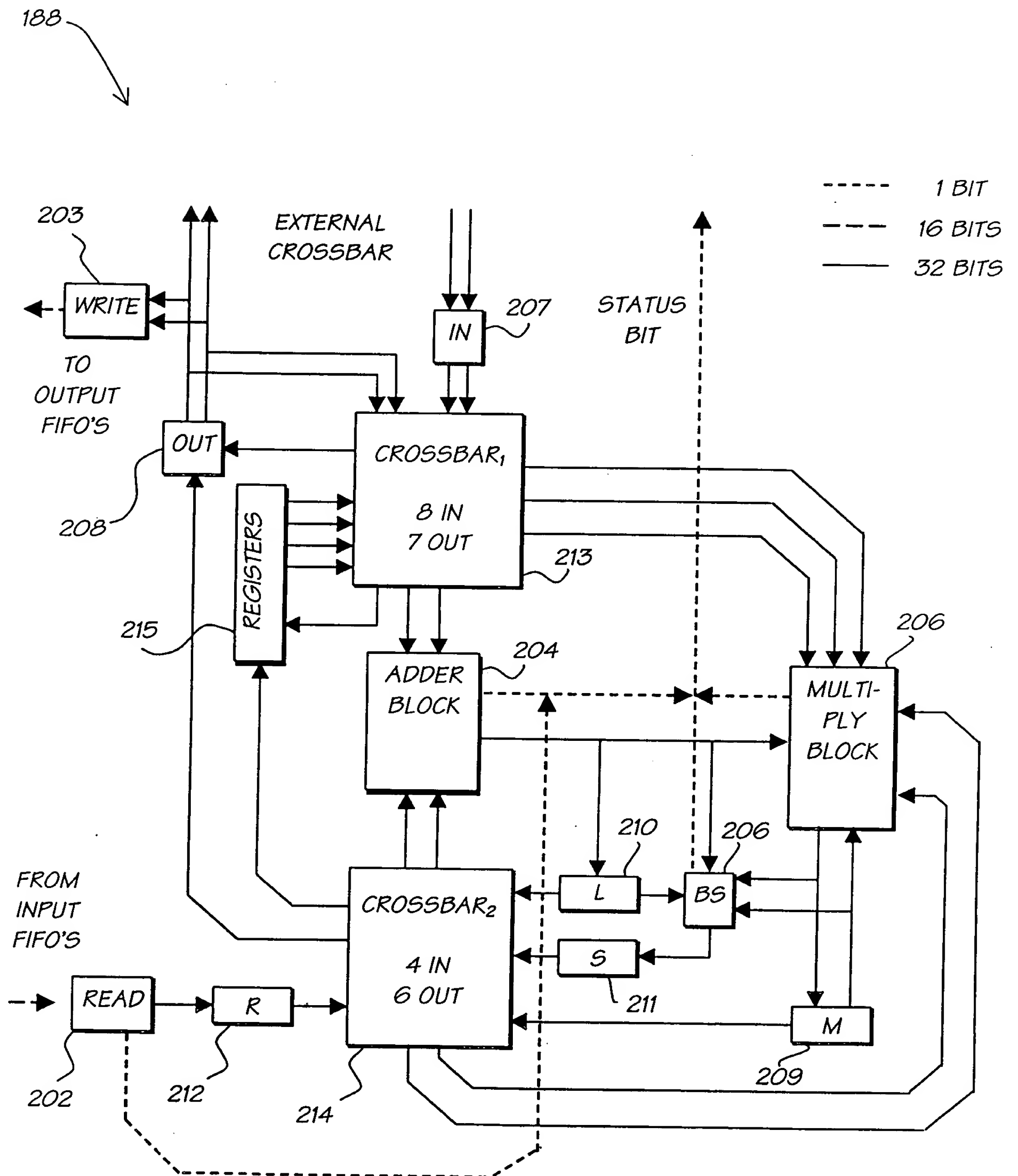


FIG. 5

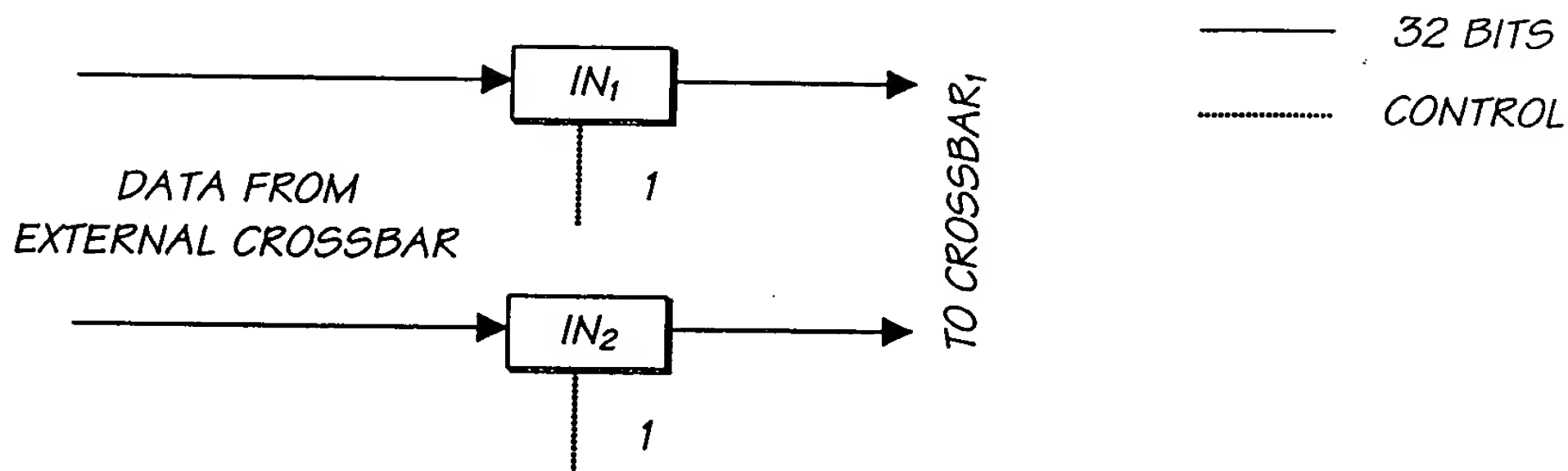


FIG. 6

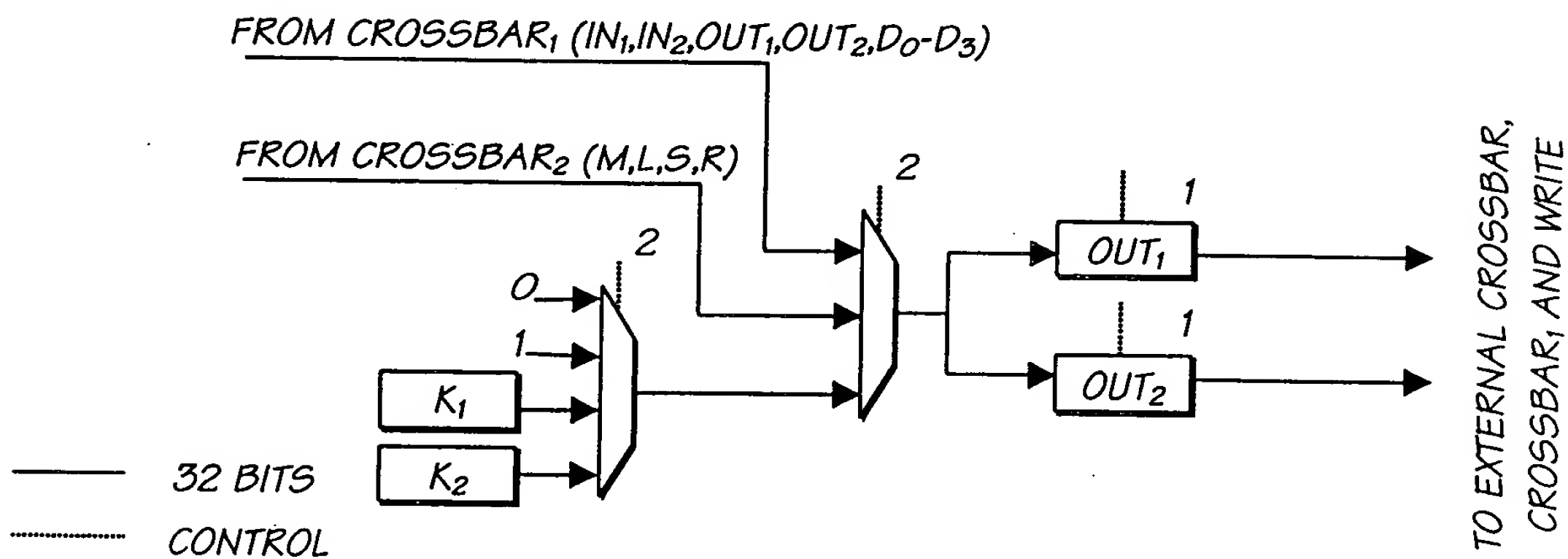


FIG. 7



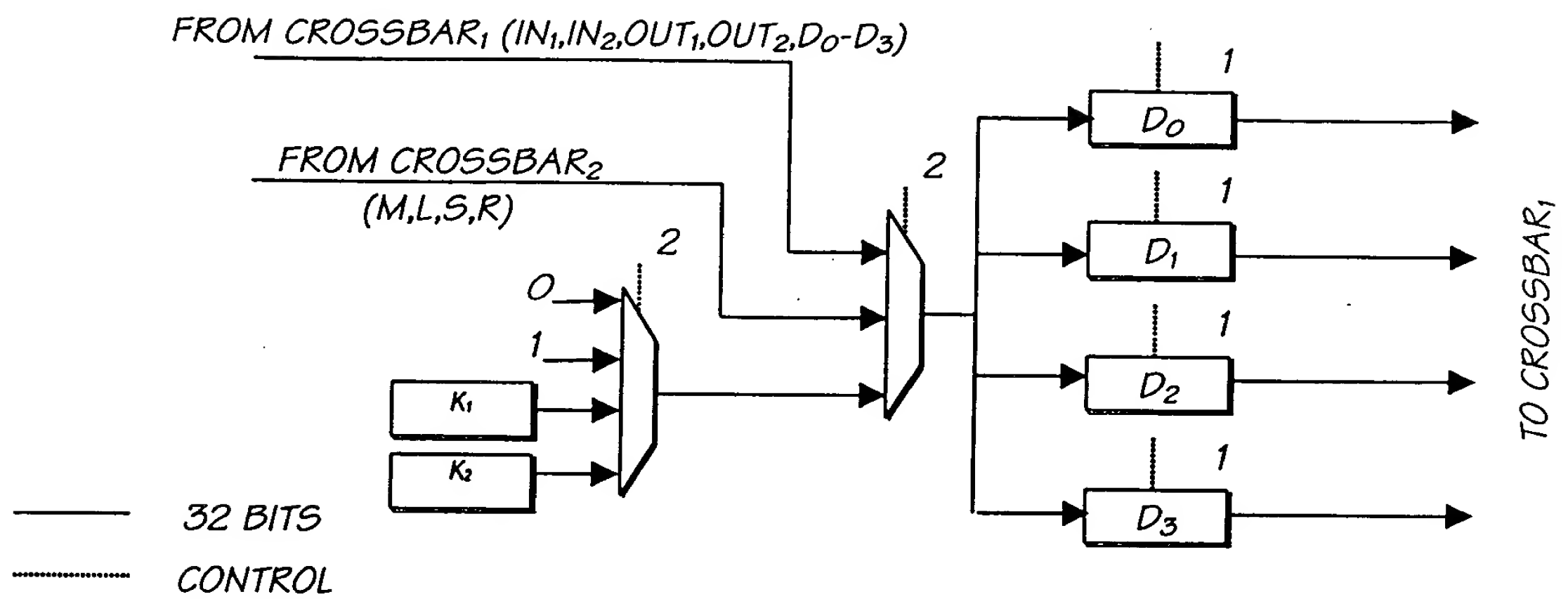


FIG. 8

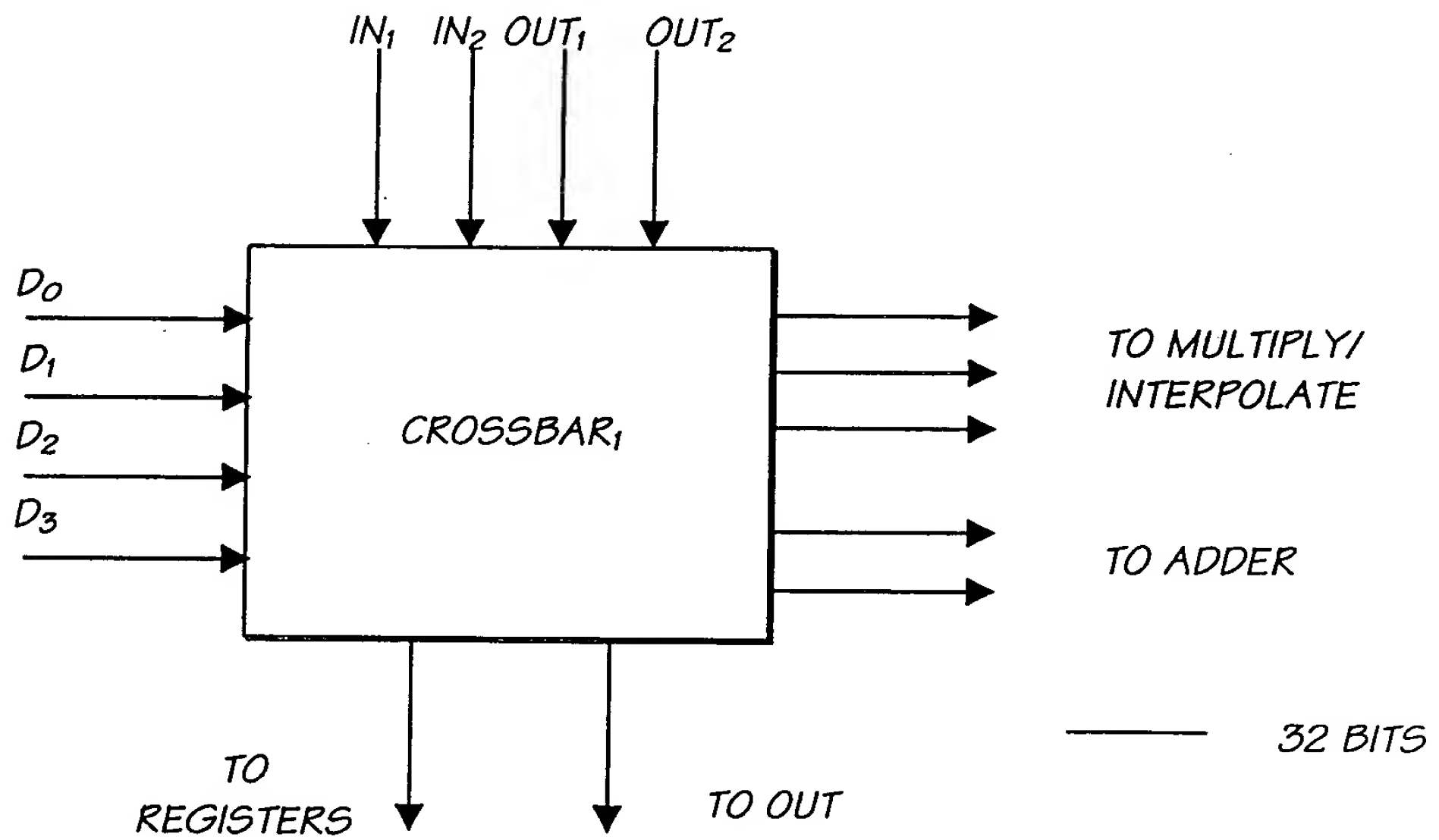


FIG. 9

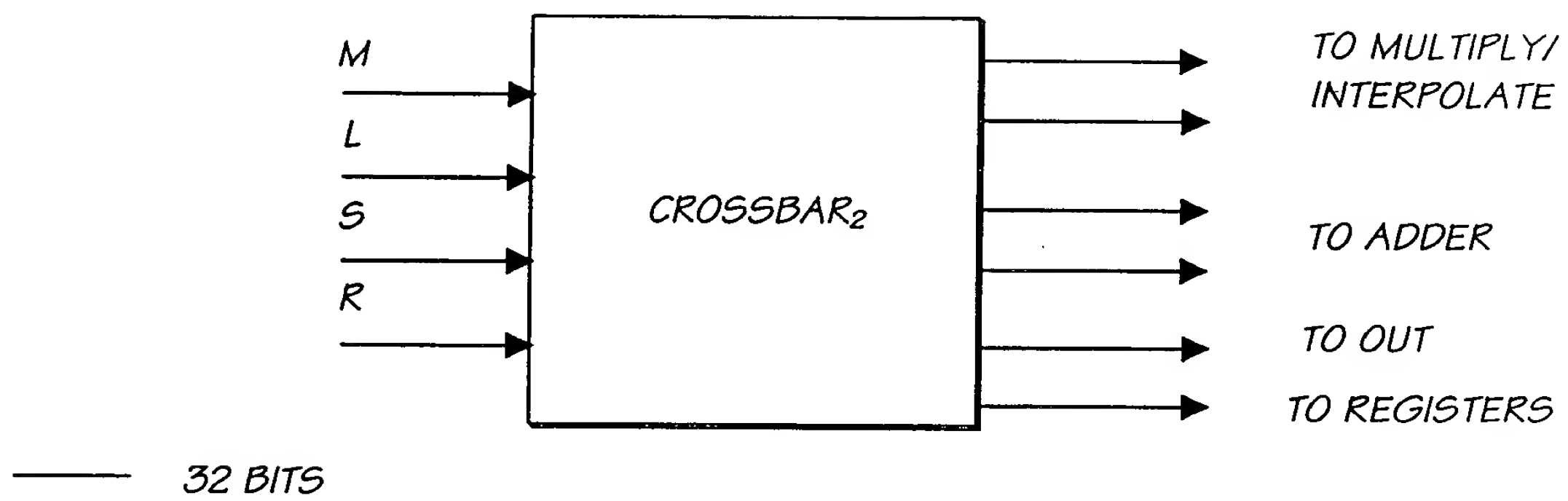


FIG. 10

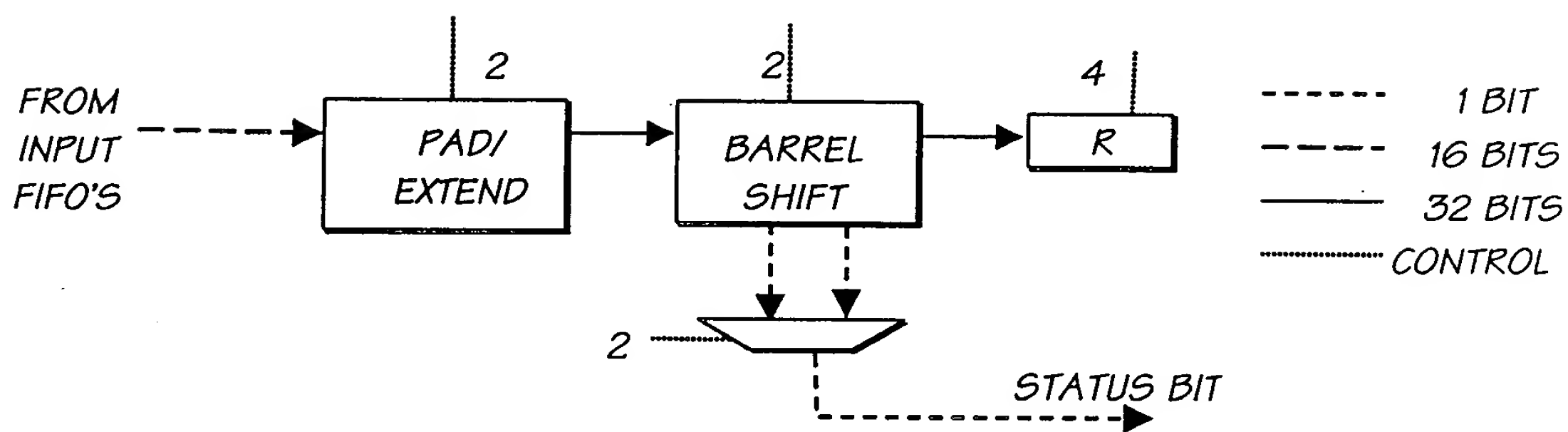


FIG. 11

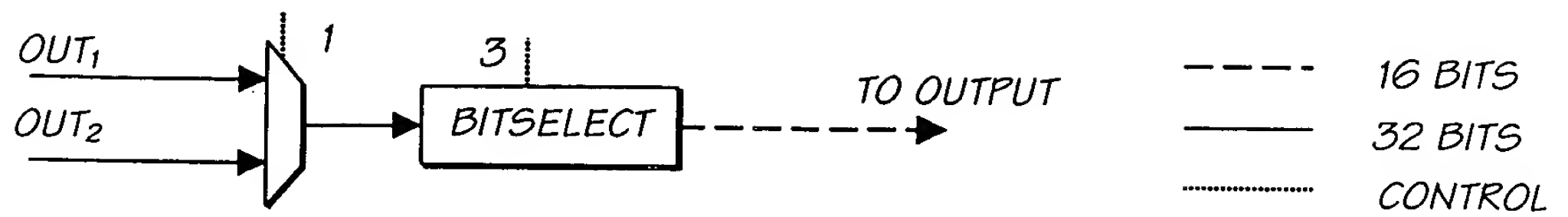


FIG. 12

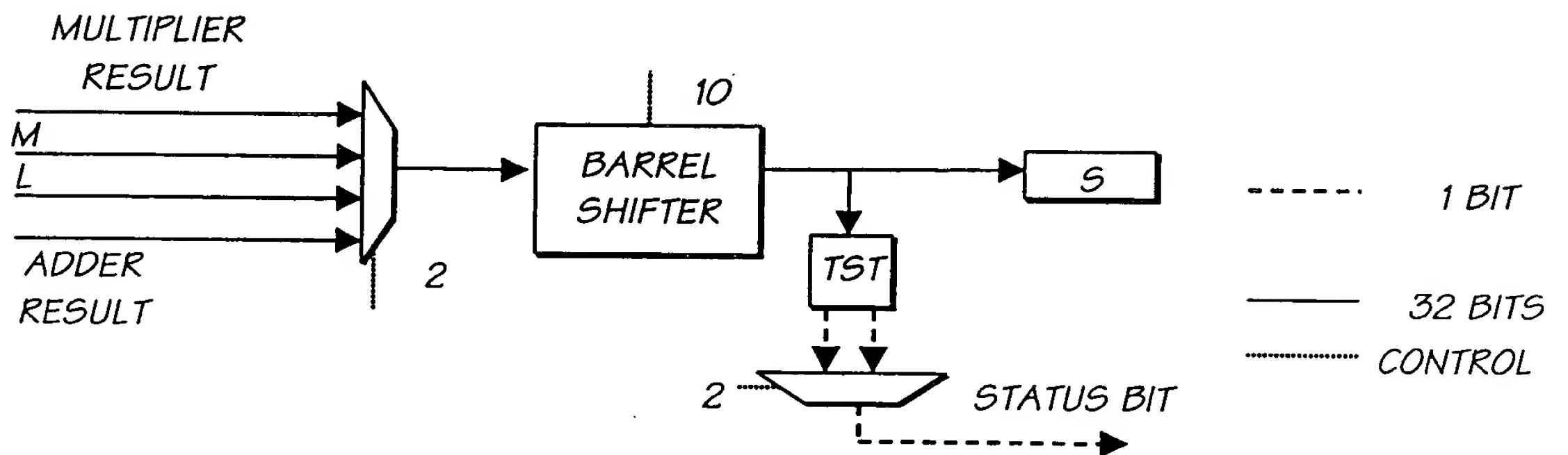


FIG. 13

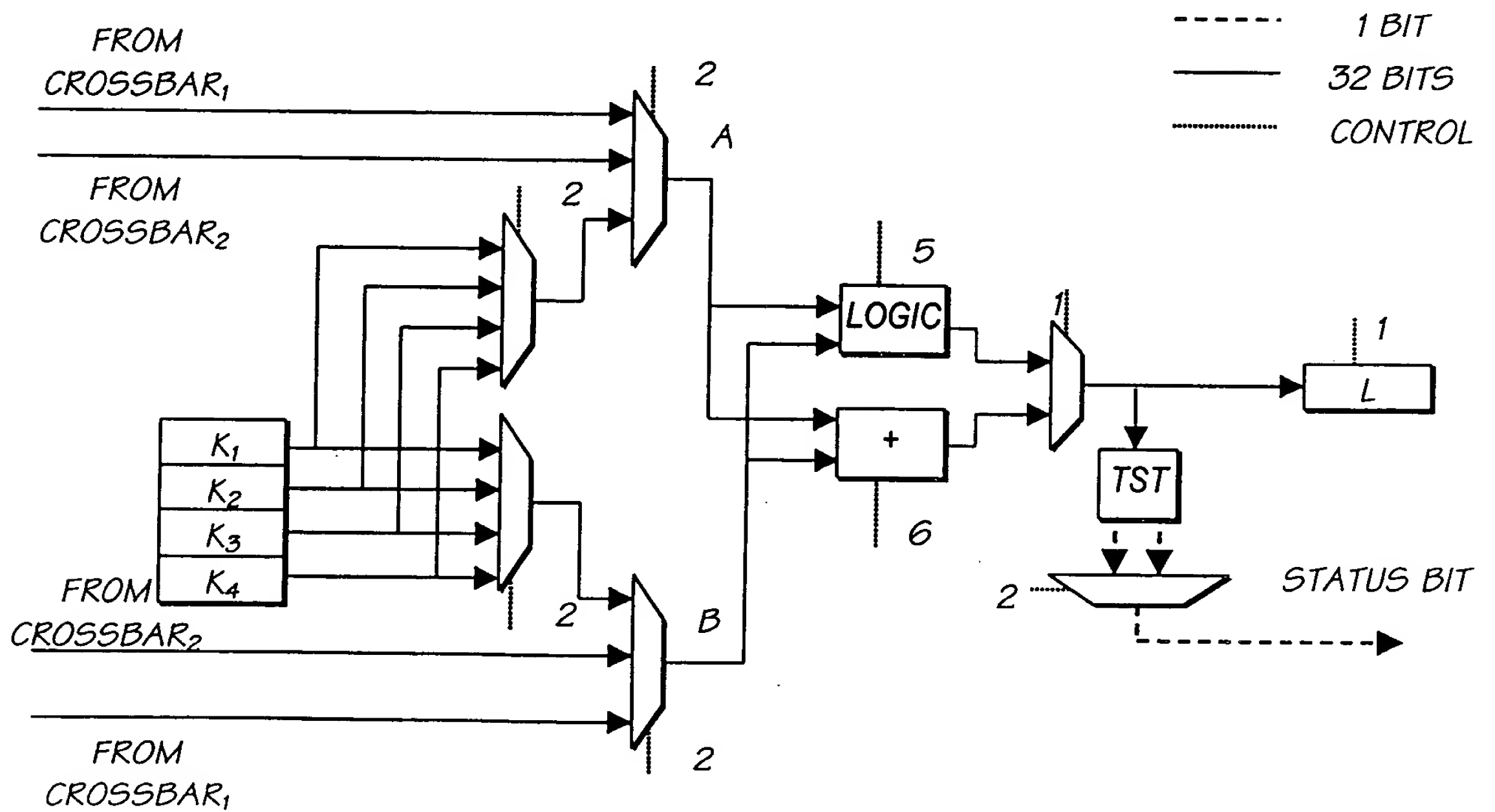


FIG. 14

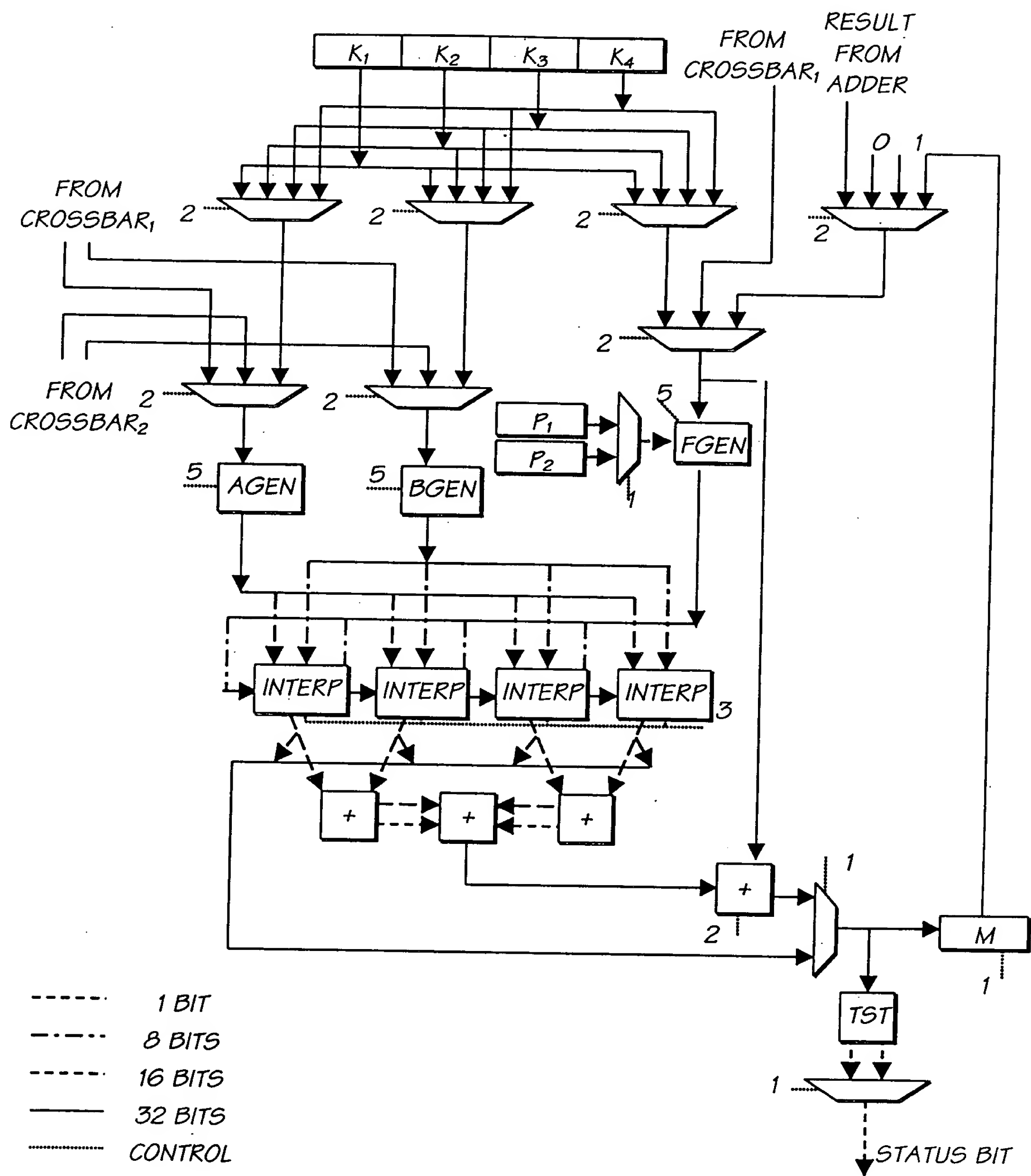


FIG. 15

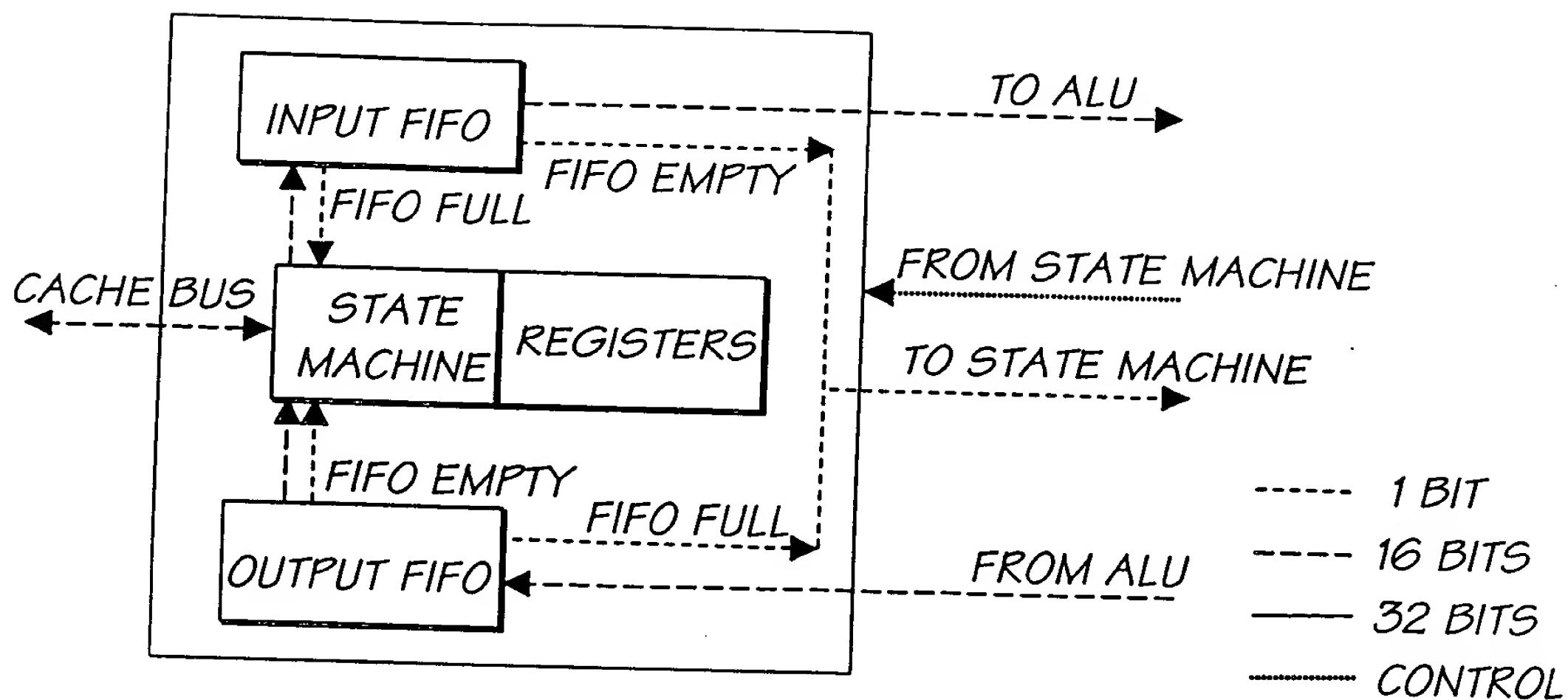


FIG. 16

ORDER OF PIXELS PRESENTED BY A SEQUENTIAL READ ITERATOR ON A 4 X 2 IMAGE WITH PADDING.

0	1	2	3	
4	5	6	7	

FIG. 17

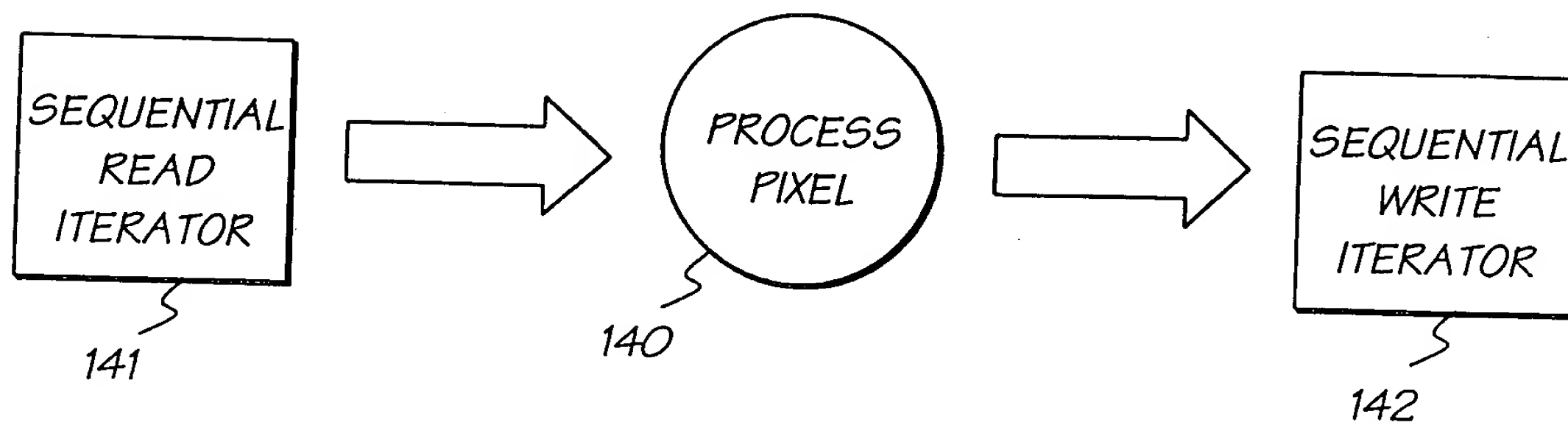
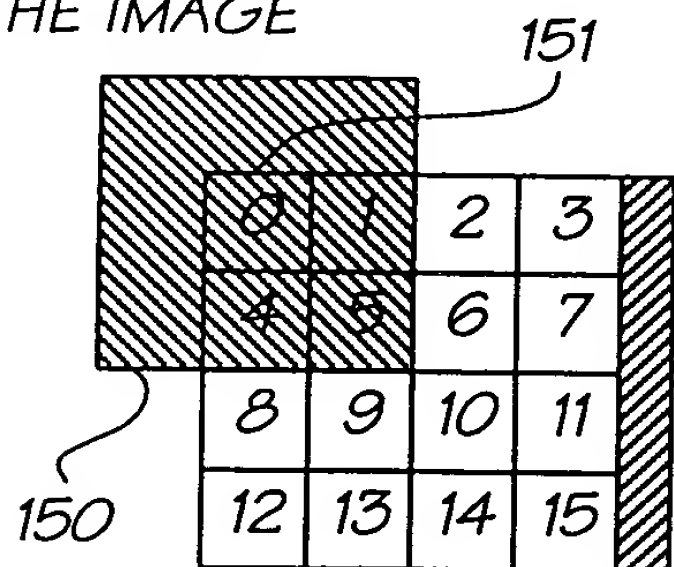


FIG. 18

A 3x3 BOX VIEW TRAVERSES THE PIXELS IN ORDER: 0, 1, 2, 3, 4, 5, 6, 7, 8  
ETC, PLACING A 3x3 BOX CENTERED OVER EACH PIXEL...

3x3 BOX VIEW OF FIRST  
PIXEL IN IMAGE = 9 PIXELS,  
5 OF WHICH ARE OUTSIDE  
THE IMAGE

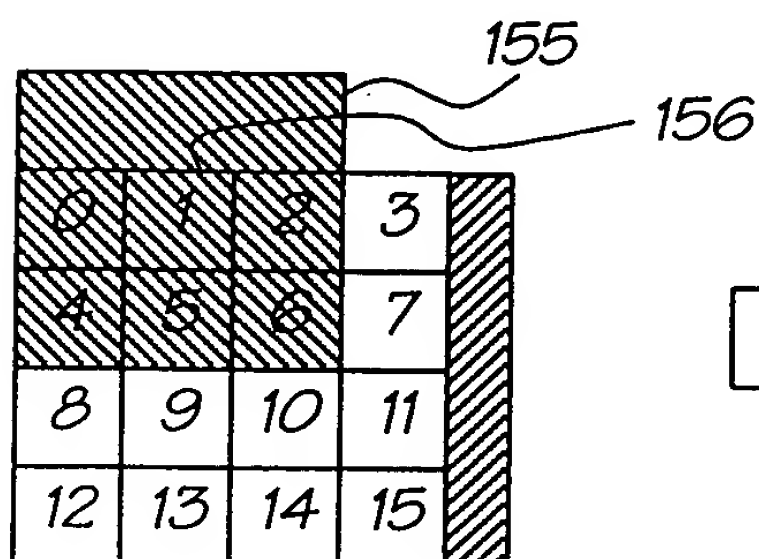


FIRST 9 PIXELS FROM THE BOX  
READ ITERATOR:

IF DUPLICATION OF EDGE PIXELS IS  
ON: 0, 0, 0, 0, 0, 1, 4, 4, 5

IF DUPLICATION OF EDGE PIXELS IS  
OFF: V, V, V, V, 0, 1, V, 4, 5  
WHERE V IS CONSTANTPIXEL  
REGISTER VALUE REPRESENTING  
"OUTSIDE THE IMAGE"

3x3 BOX VIEW OF  
SECOND PIXEL IN IMAGE  
= 9 PIXELS,  
3 OF WHICH ARE  
OUTSIDE THE IMAGE



SECOND 9 PIXELS FROM THE BOX  
READ ITERATOR:

IF DUPLICATION OF EDGE PIXELS  
IS ON: 0, 1, 2, 0, 1, 2, 4, 5, 6

IF DUPLICATION OF EDGE PIXELS  
IS OFF: V, V, V, 0, 1, 2, 4, 5, 6  
WHERE V IS CONSTANTPIXEL  
REGISTER VALUE REPRESENTING  
"OUTSIDE THE IMAGE"

FIG. 19

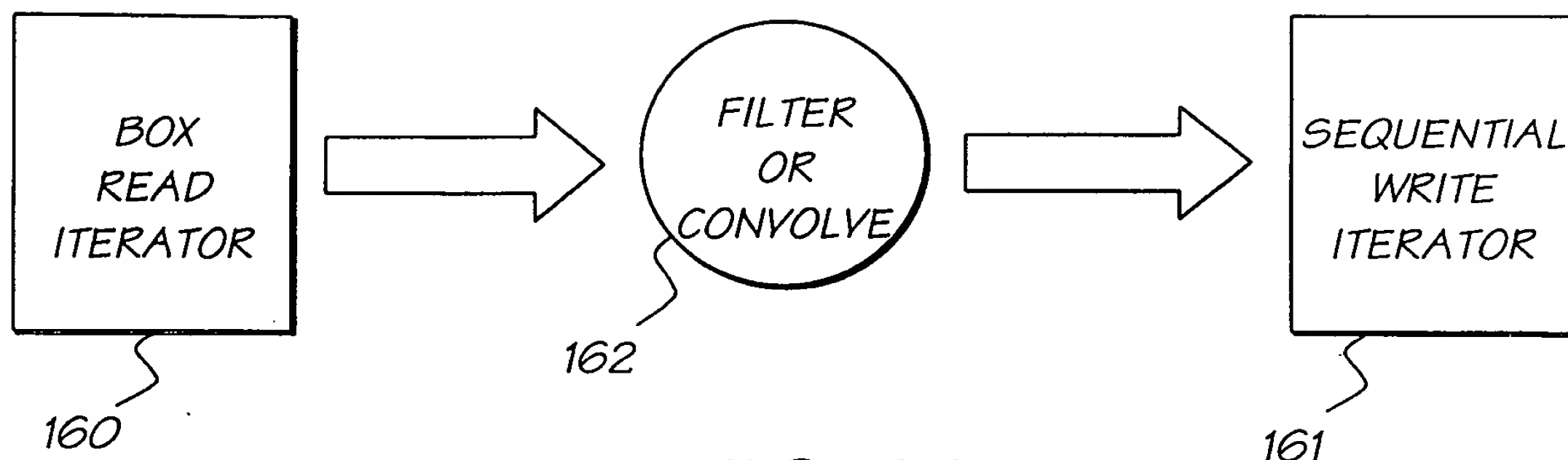
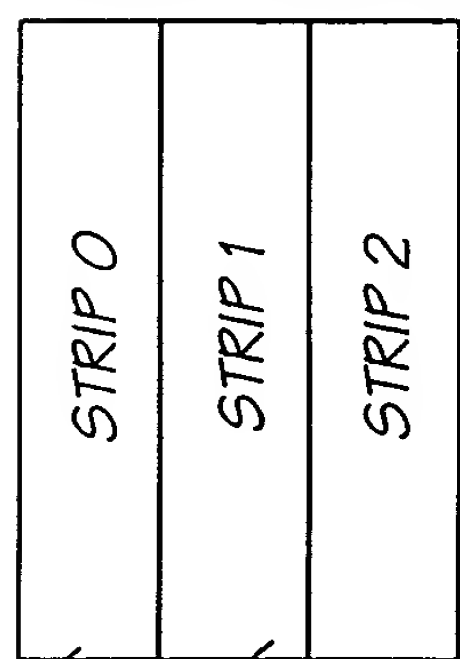


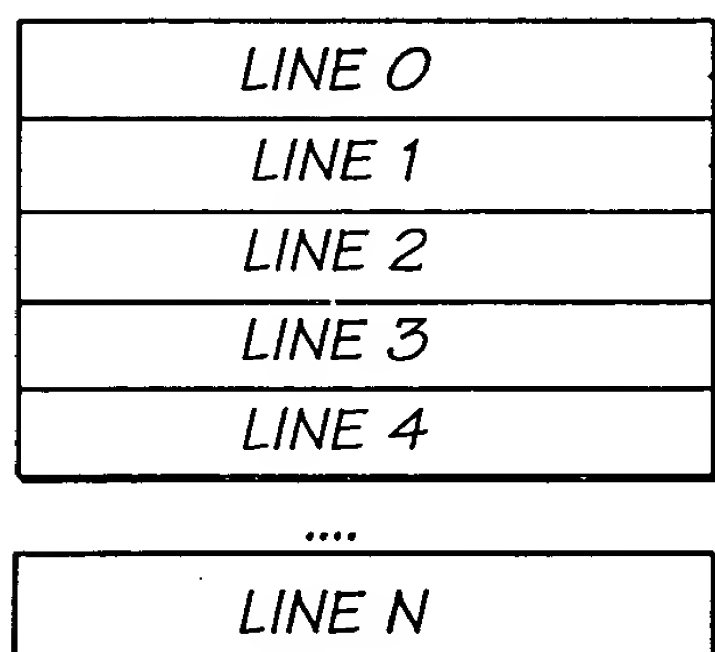
FIG. 20

IMAGE BROKEN INTO  
VERTICAL STRIPS,  
EACH STRIP IS 32  
PIXELS ACROSS



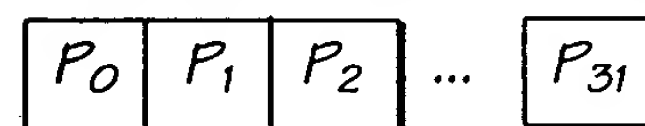
169 170

LINES ARE ACCESSED  
LINE 0 TO LINE N  
WITHIN A SINGLE STRIP.



166

PIXELS ARE ACCESSED  
PIXEL 0 - PIXEL 31  
WITHIN A SINGLE LINE



165

FIG. 21

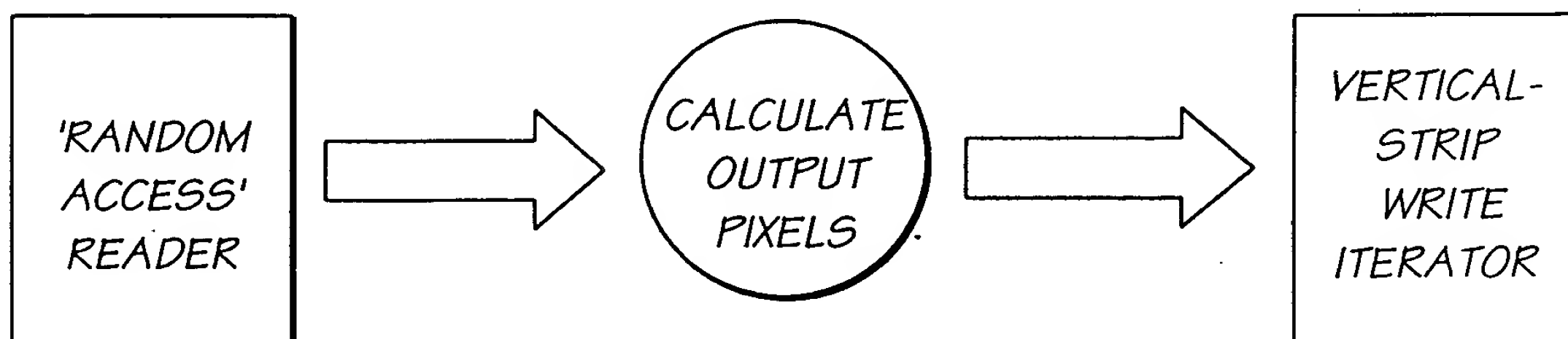


FIG. 22

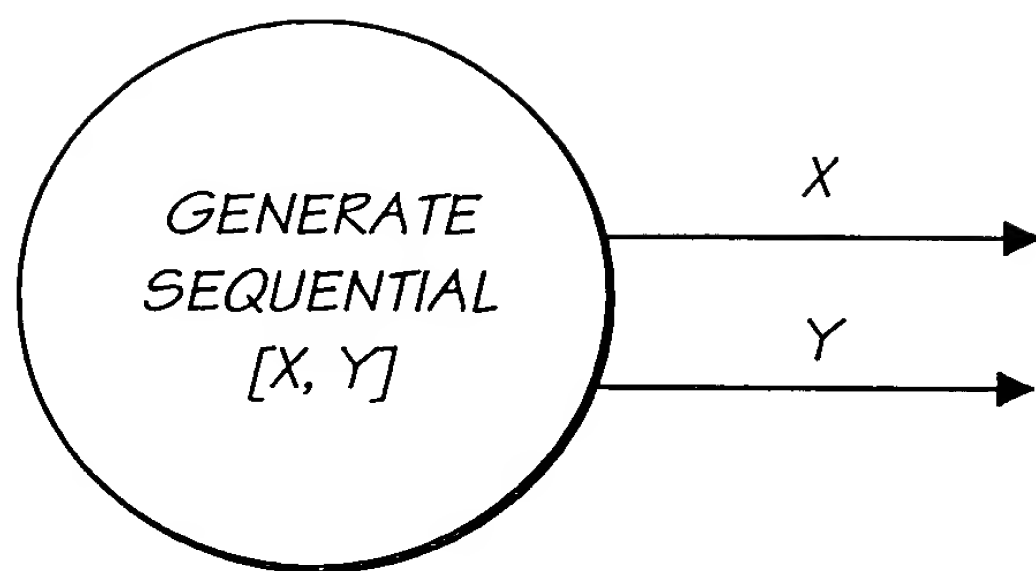


FIG. 23

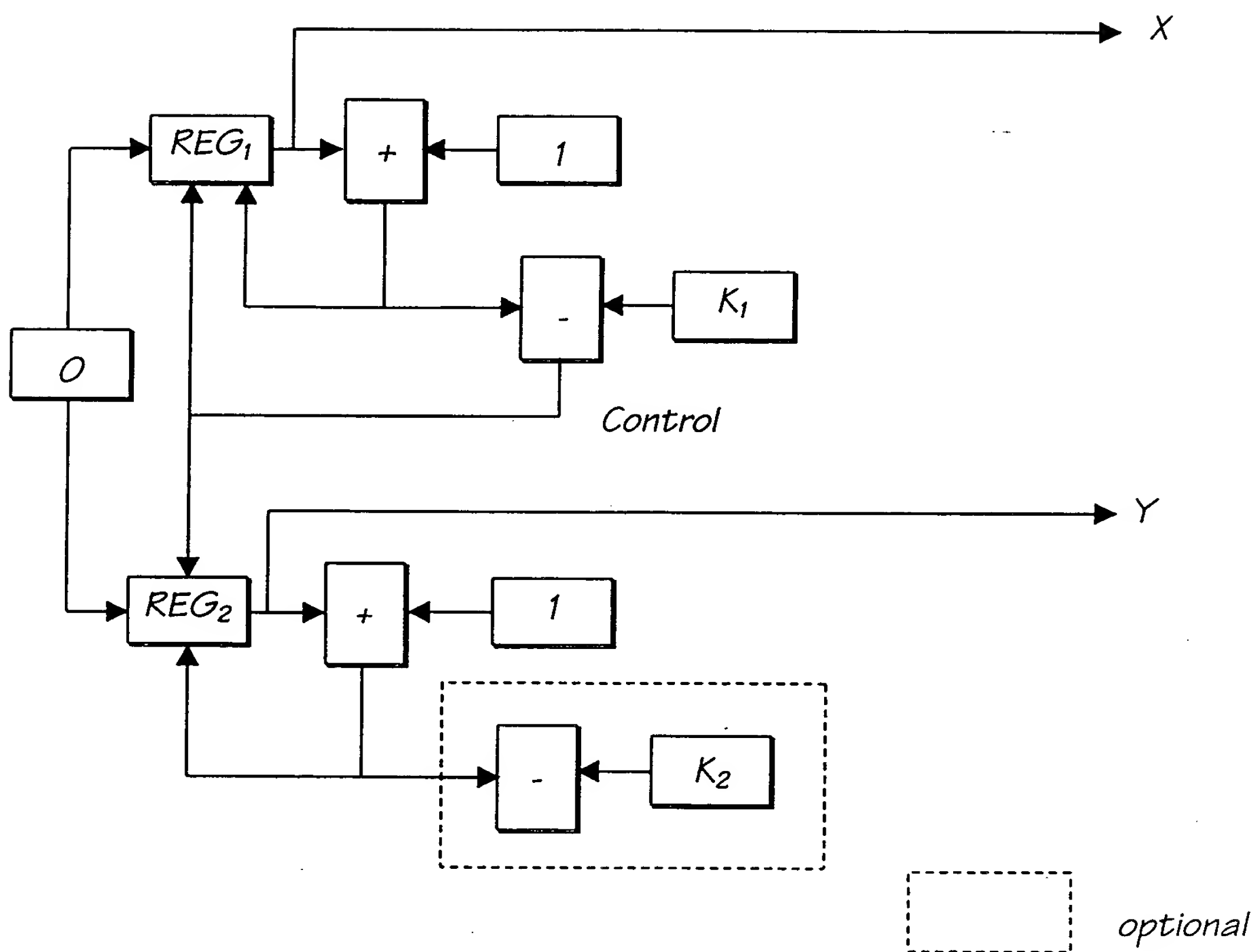


FIG. 24



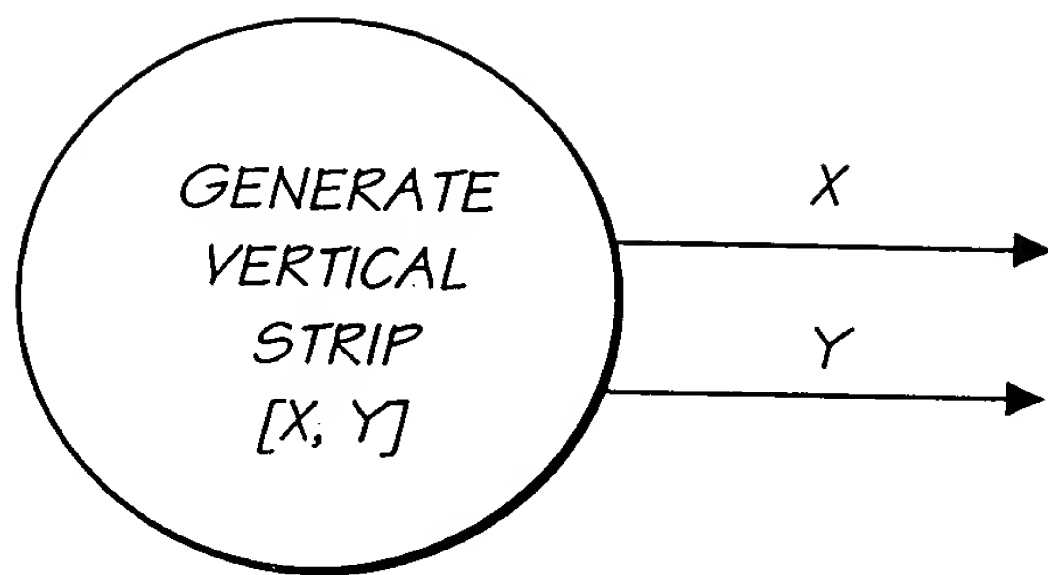


FIG. 25

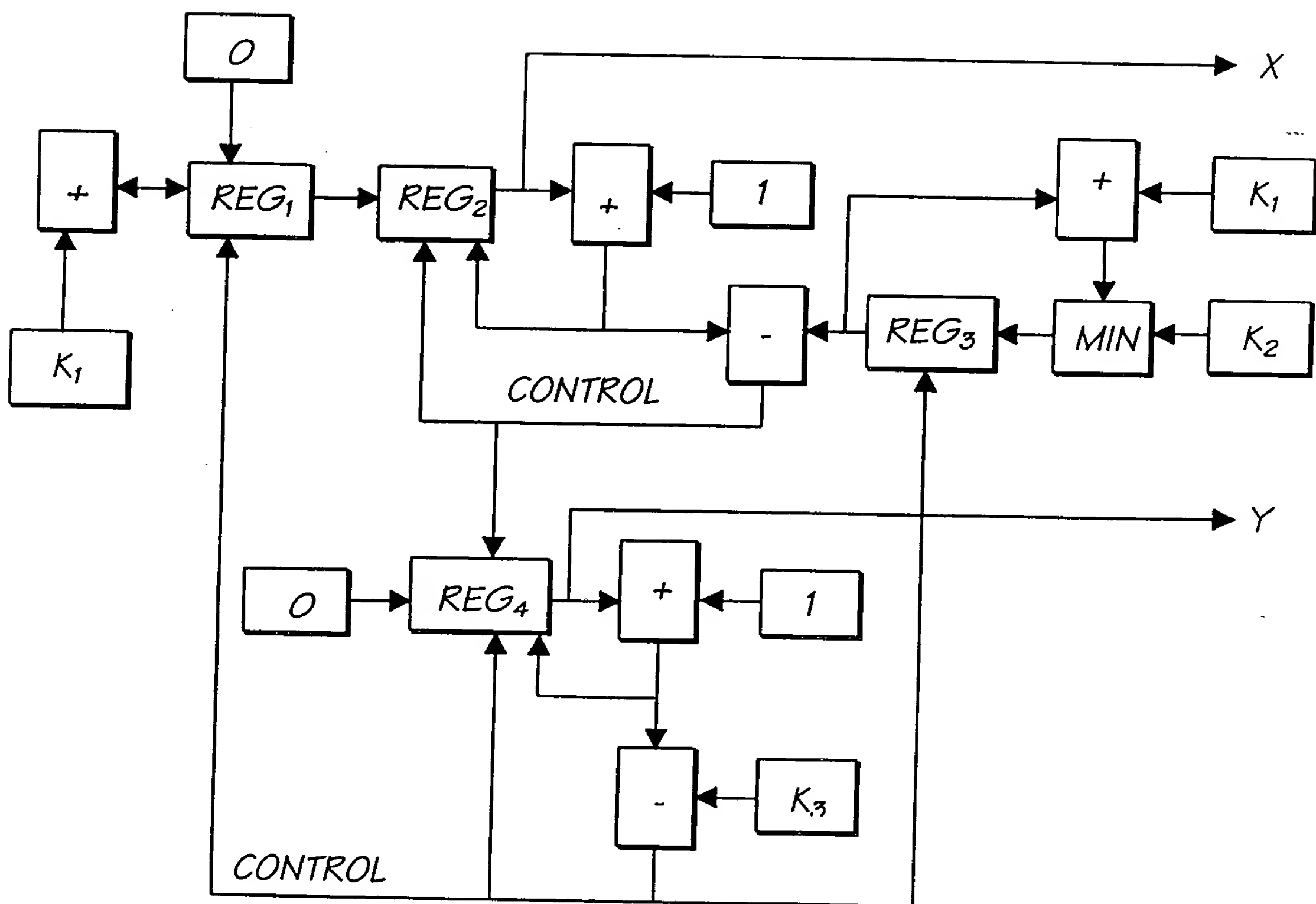
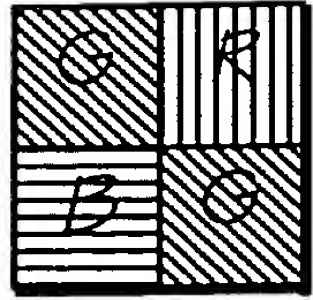


FIG. 26



2X2 PIXEL BLOCK FROM SENSOR

FIG. 27

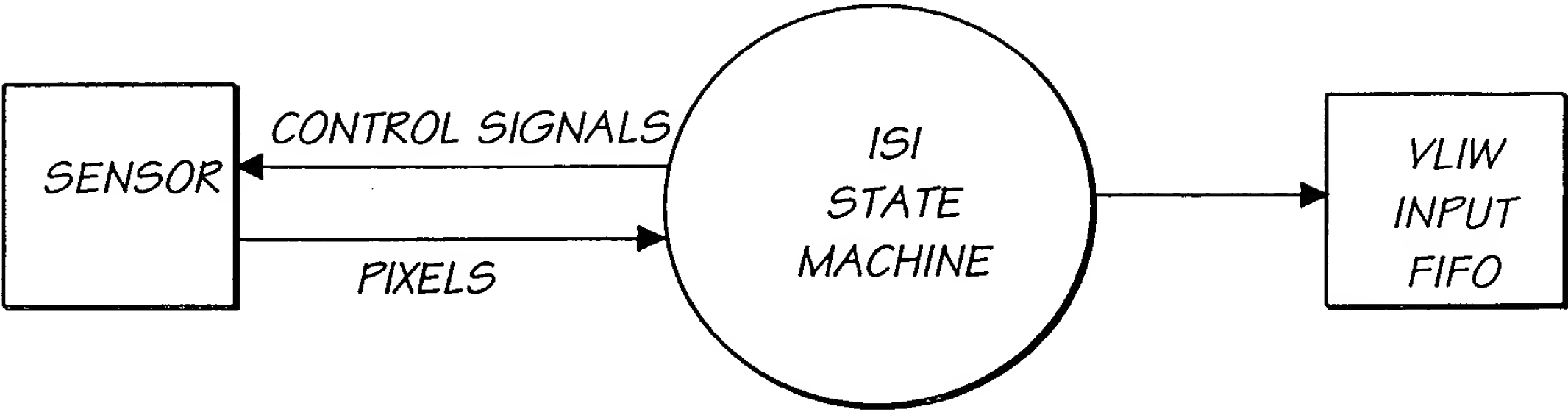


FIG. 28

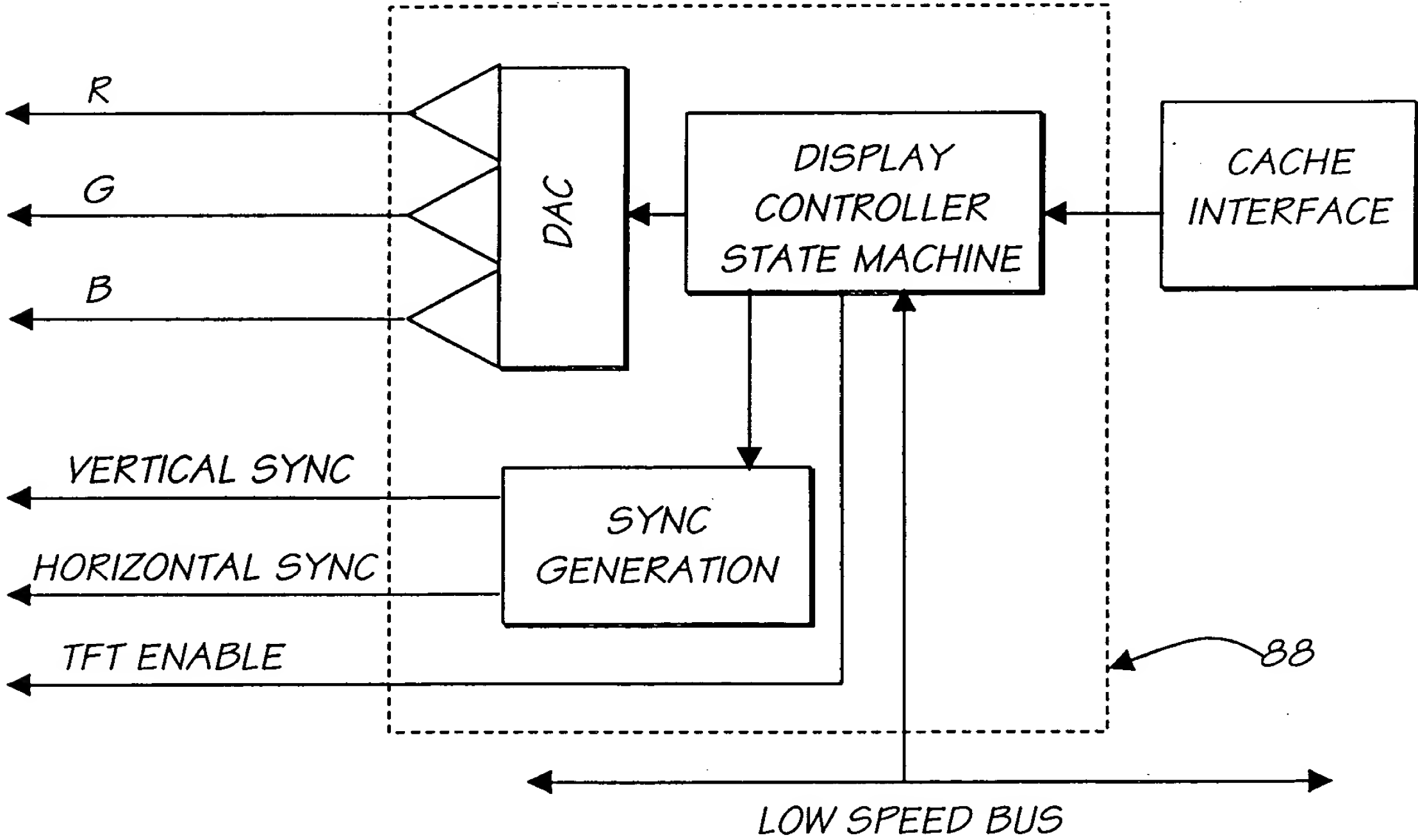
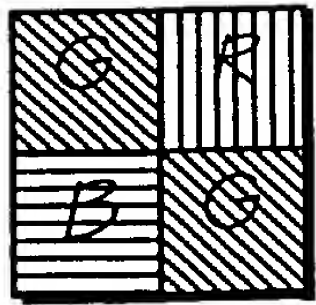


FIG. 29



2X2 PIXEL BLOCK FROM CCD

FIG. 30

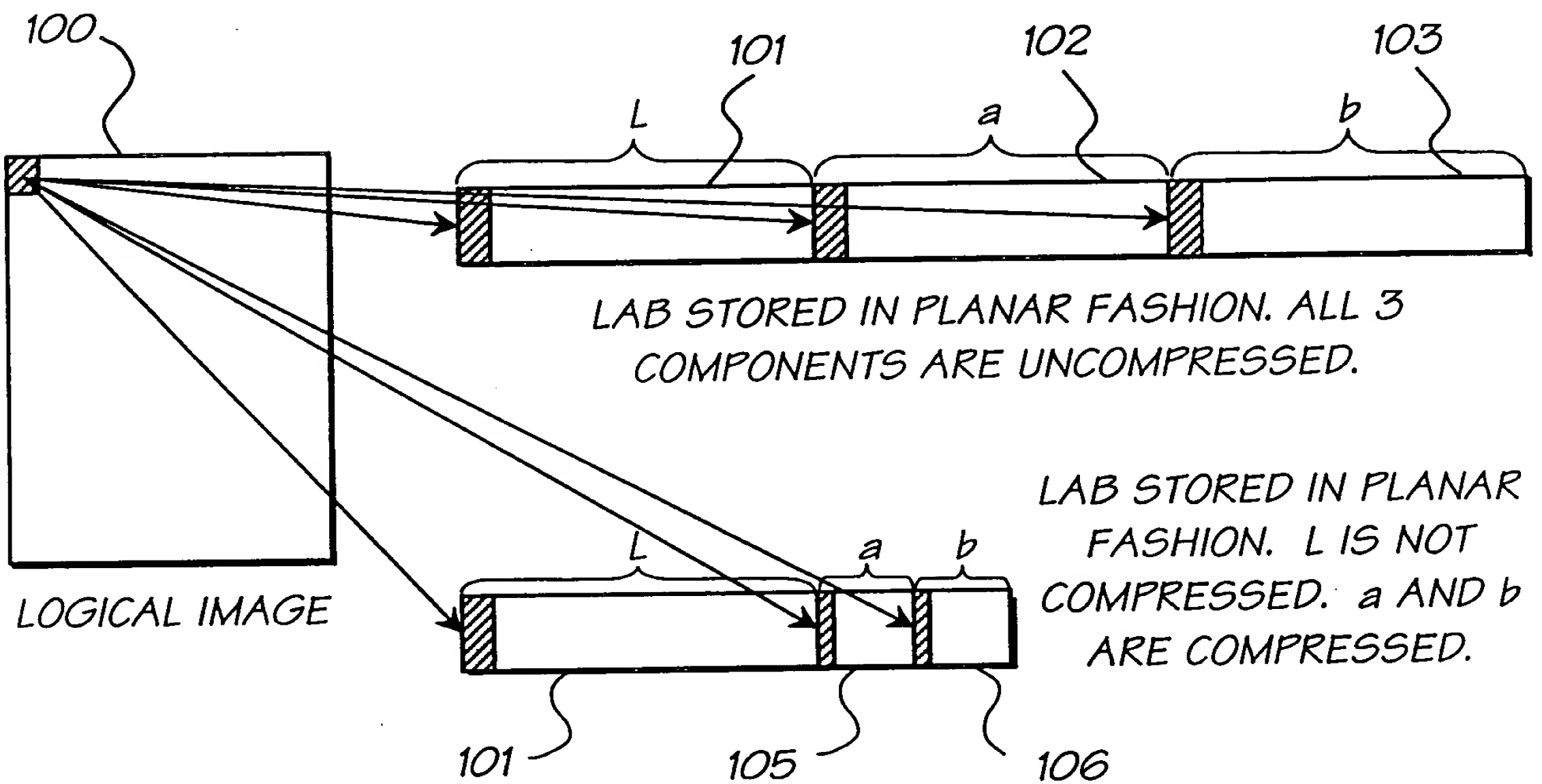


FIG. 31

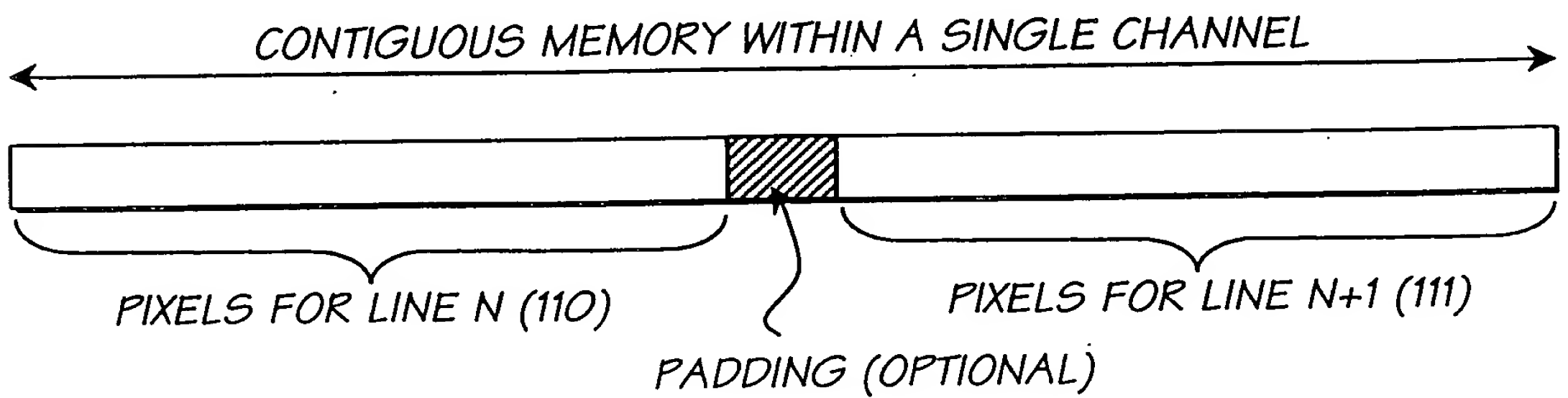


FIG. 32

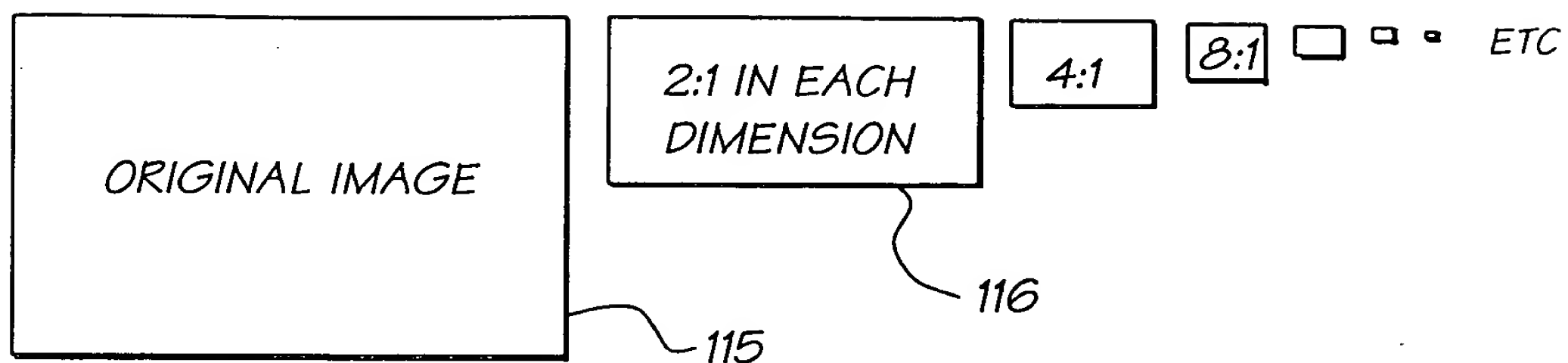


FIG. 33

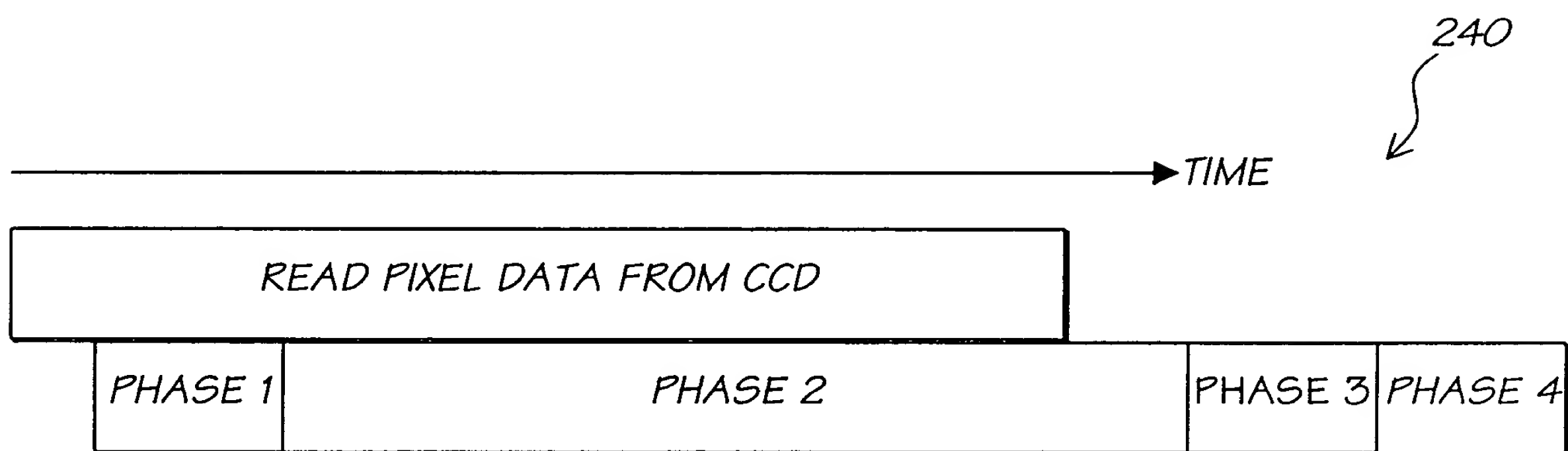


FIG. 34

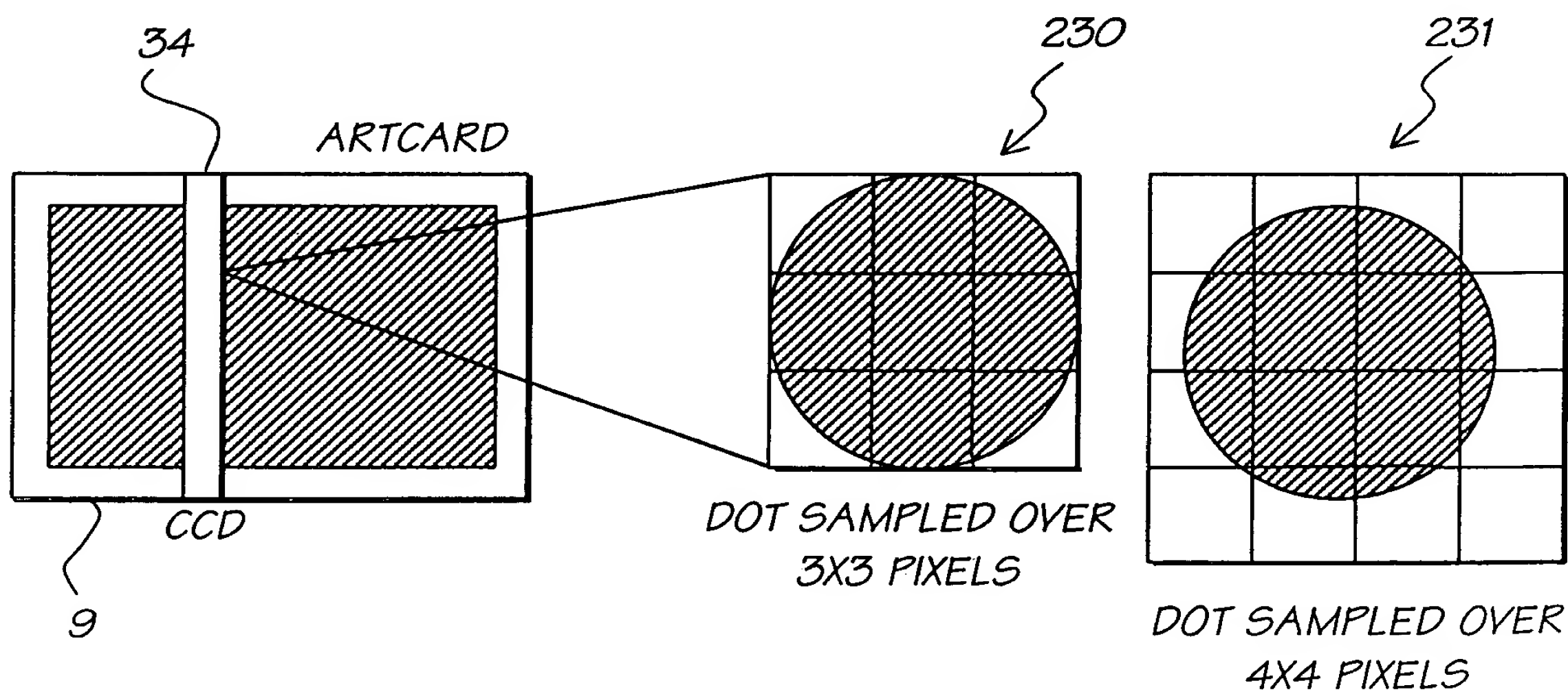


FIG. 35

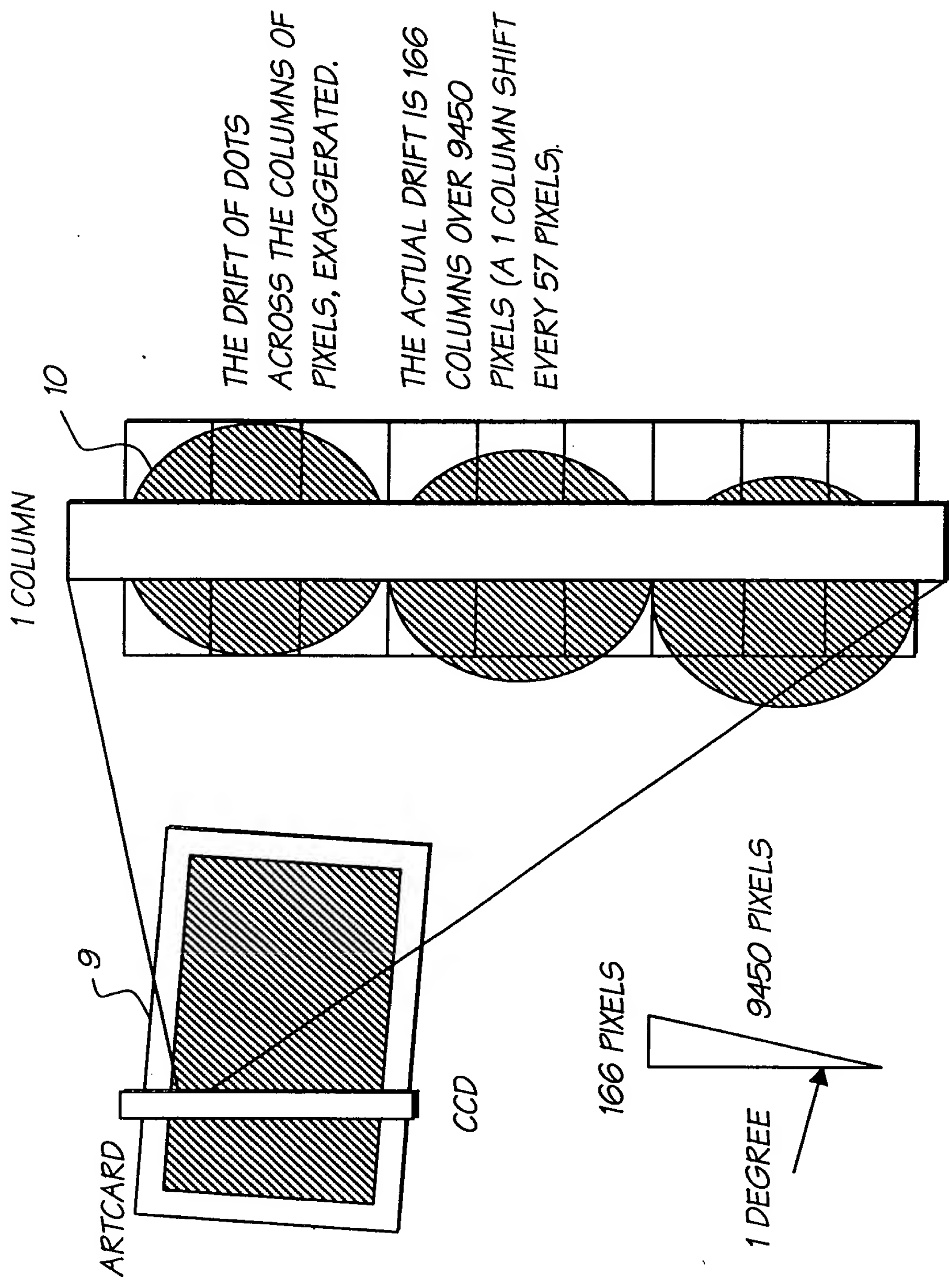


FIG. 36

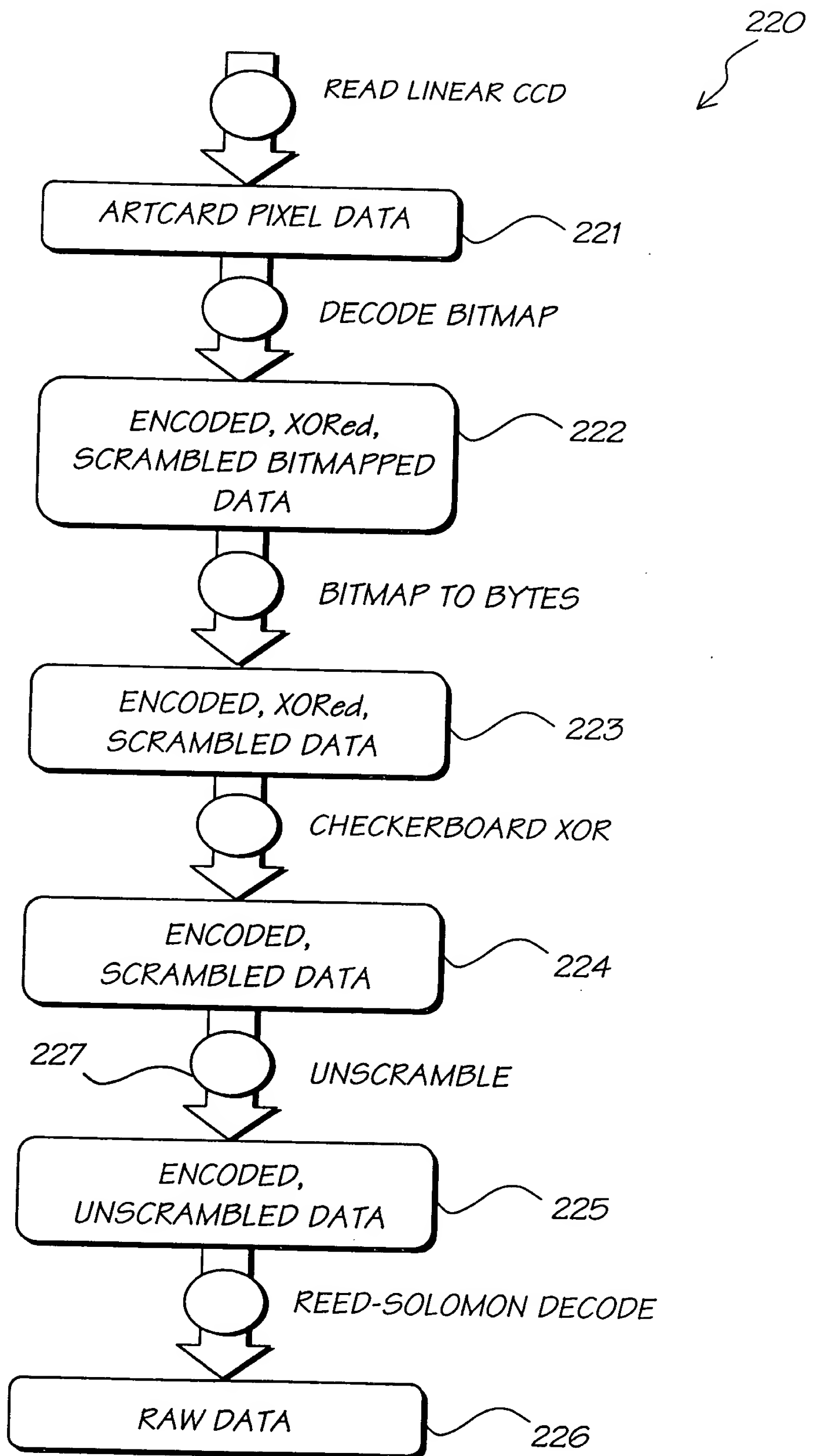


FIG. 37

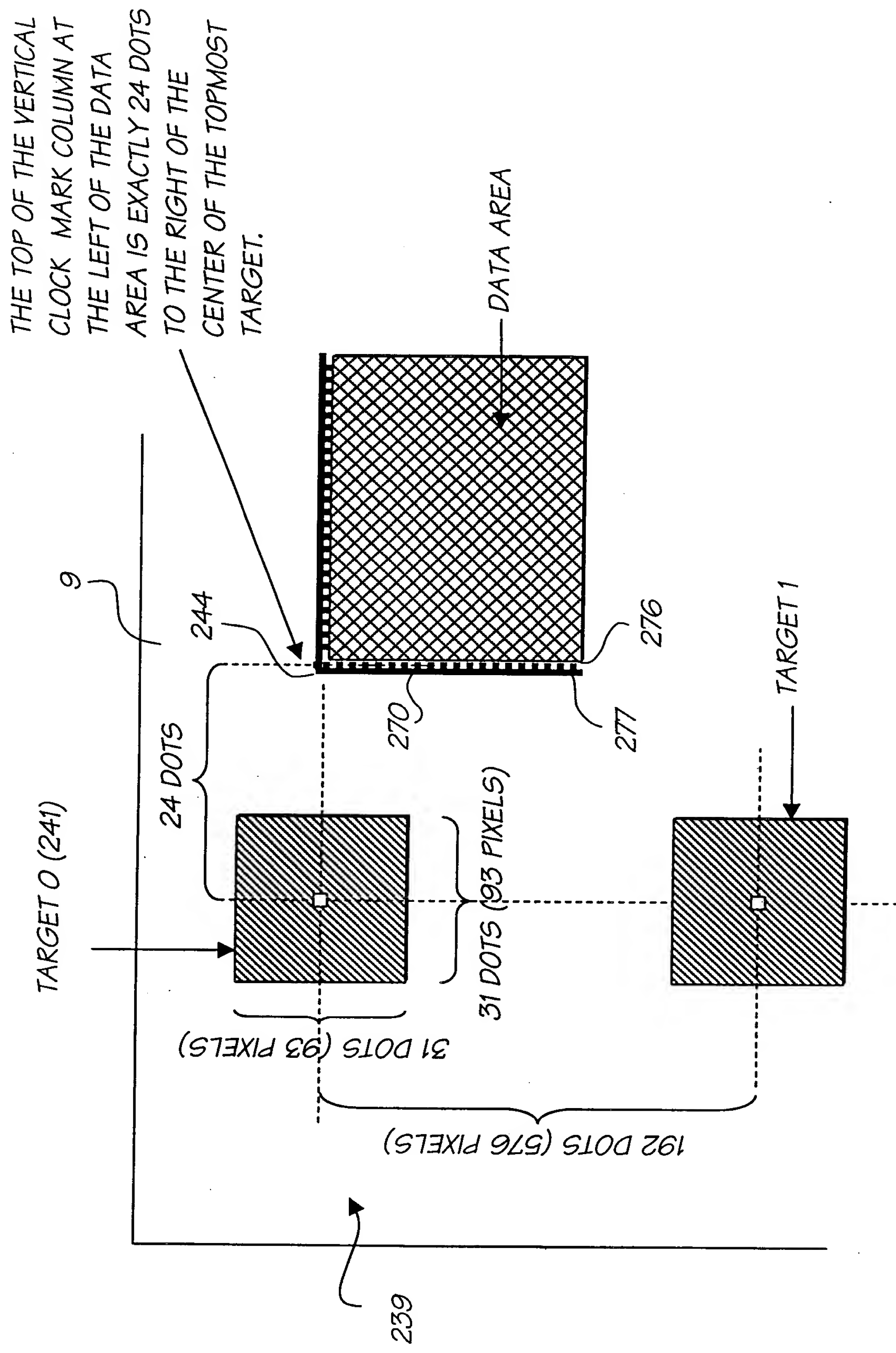


FIG. 38

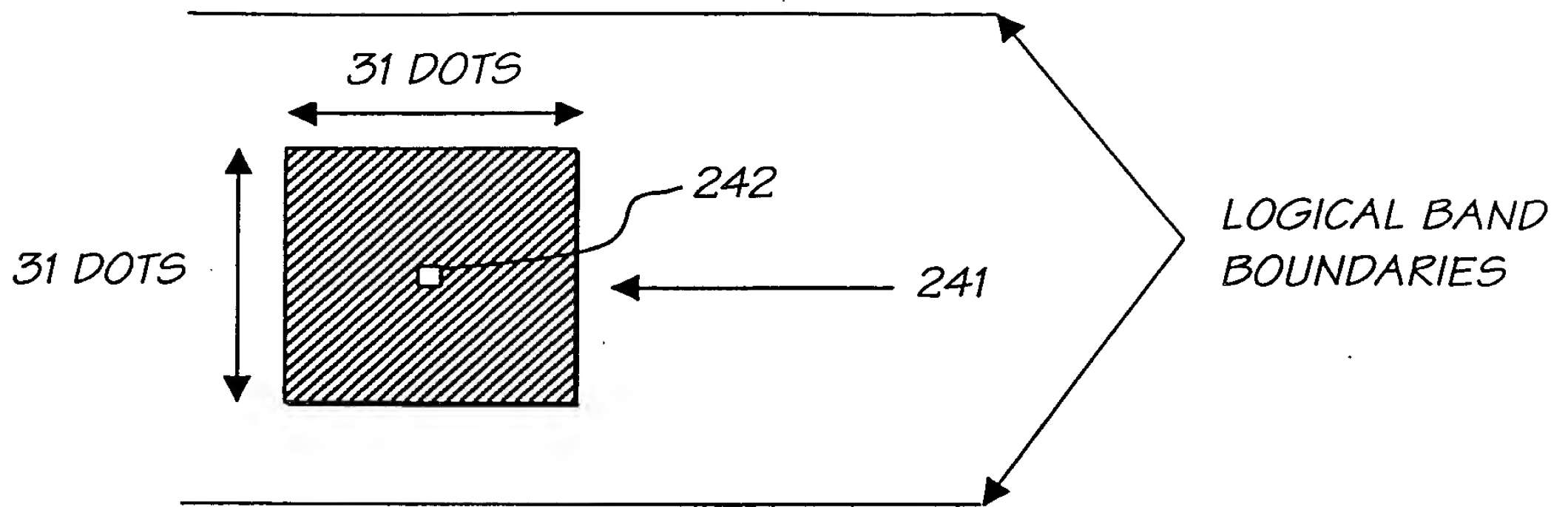


FIG. 39

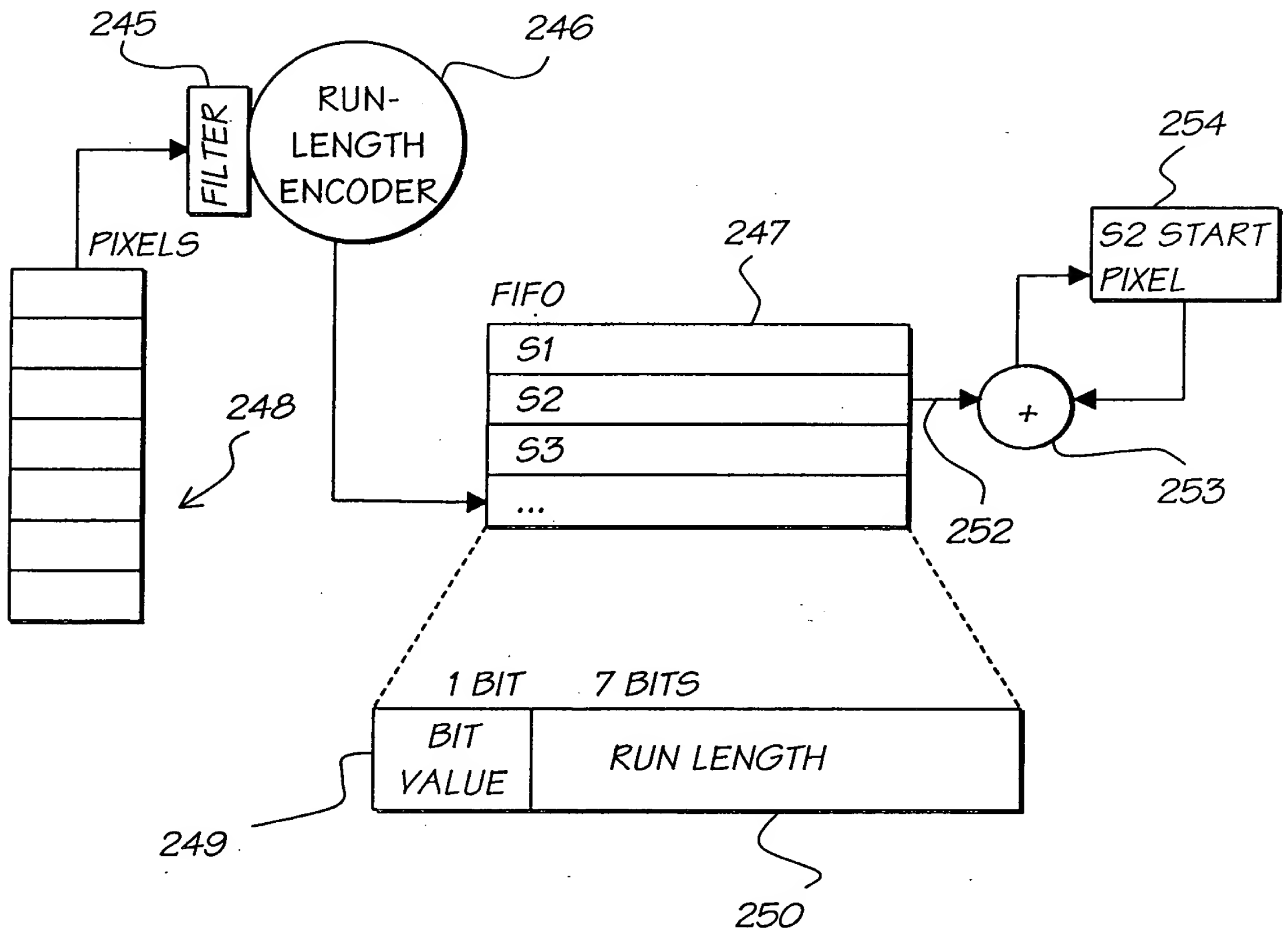


FIG. 40



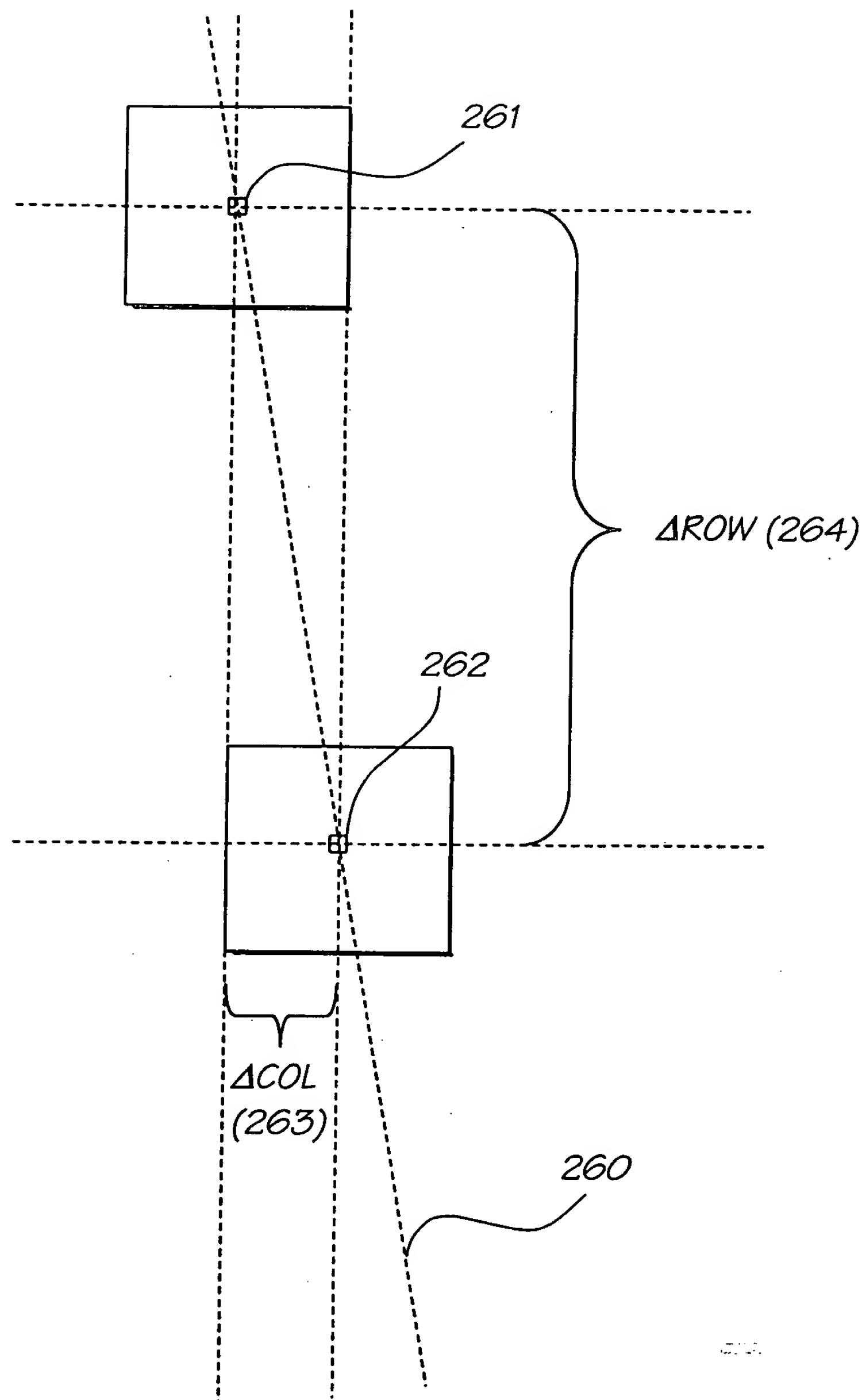


FIG. 41

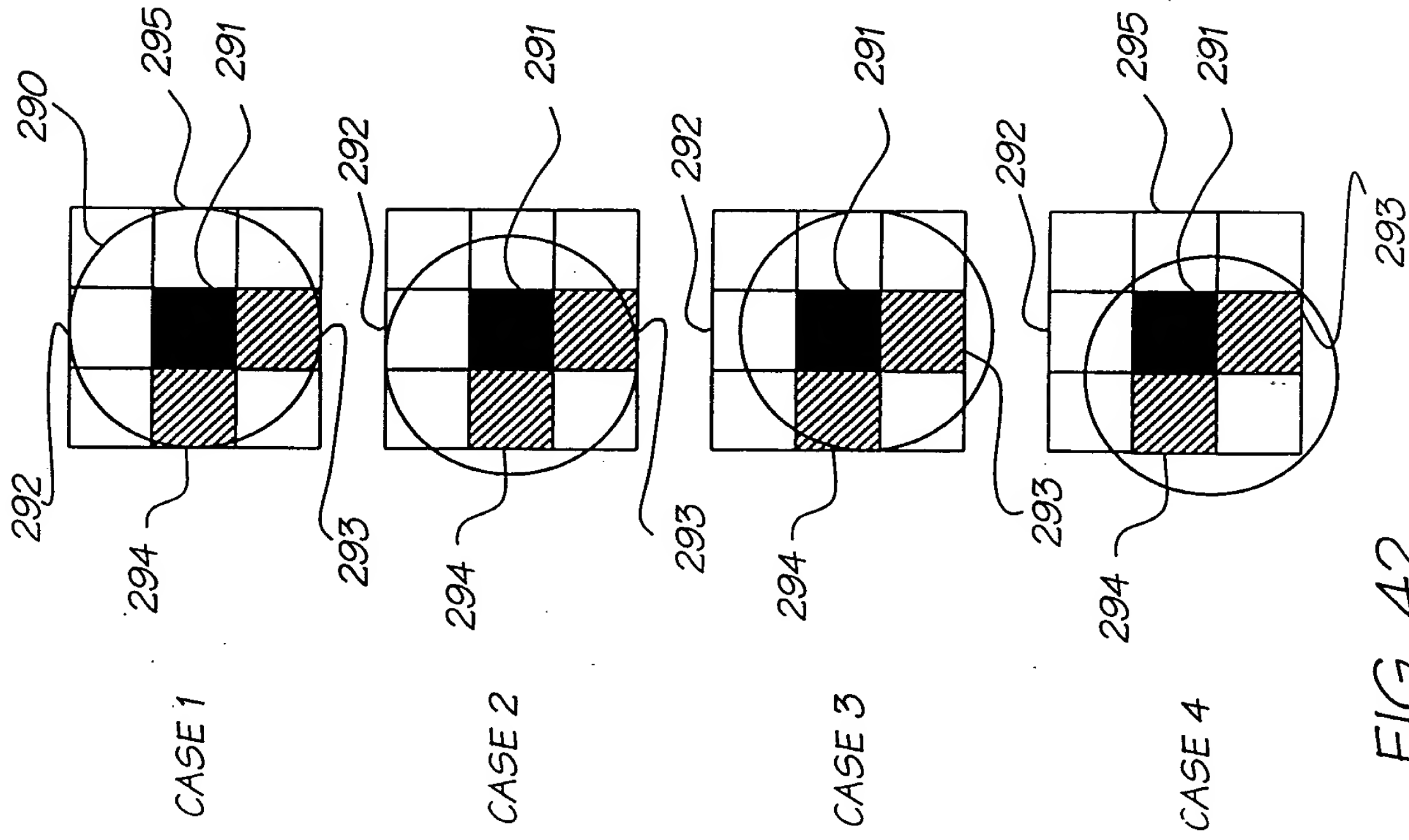


FIG. 42

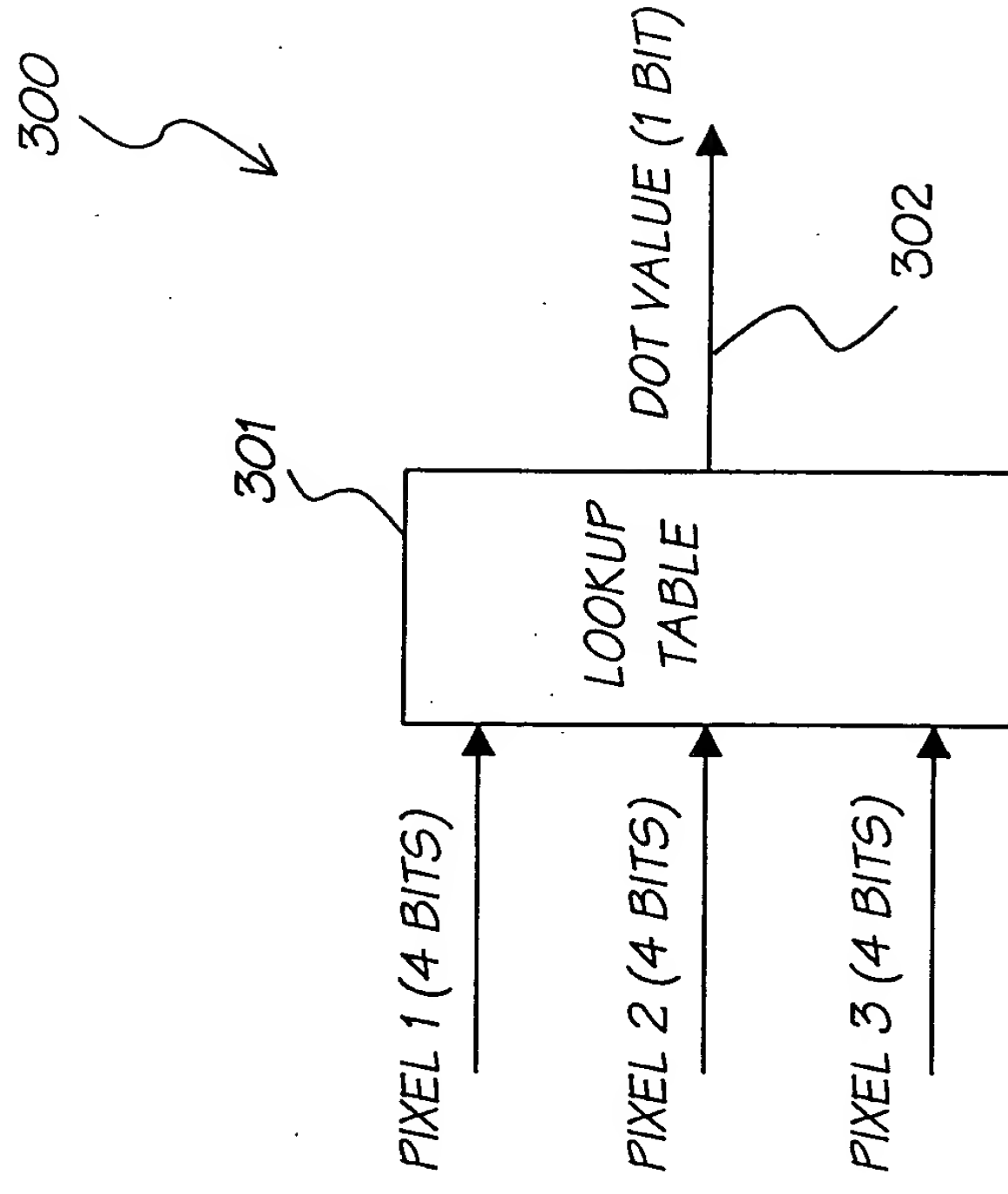


FIG. 43

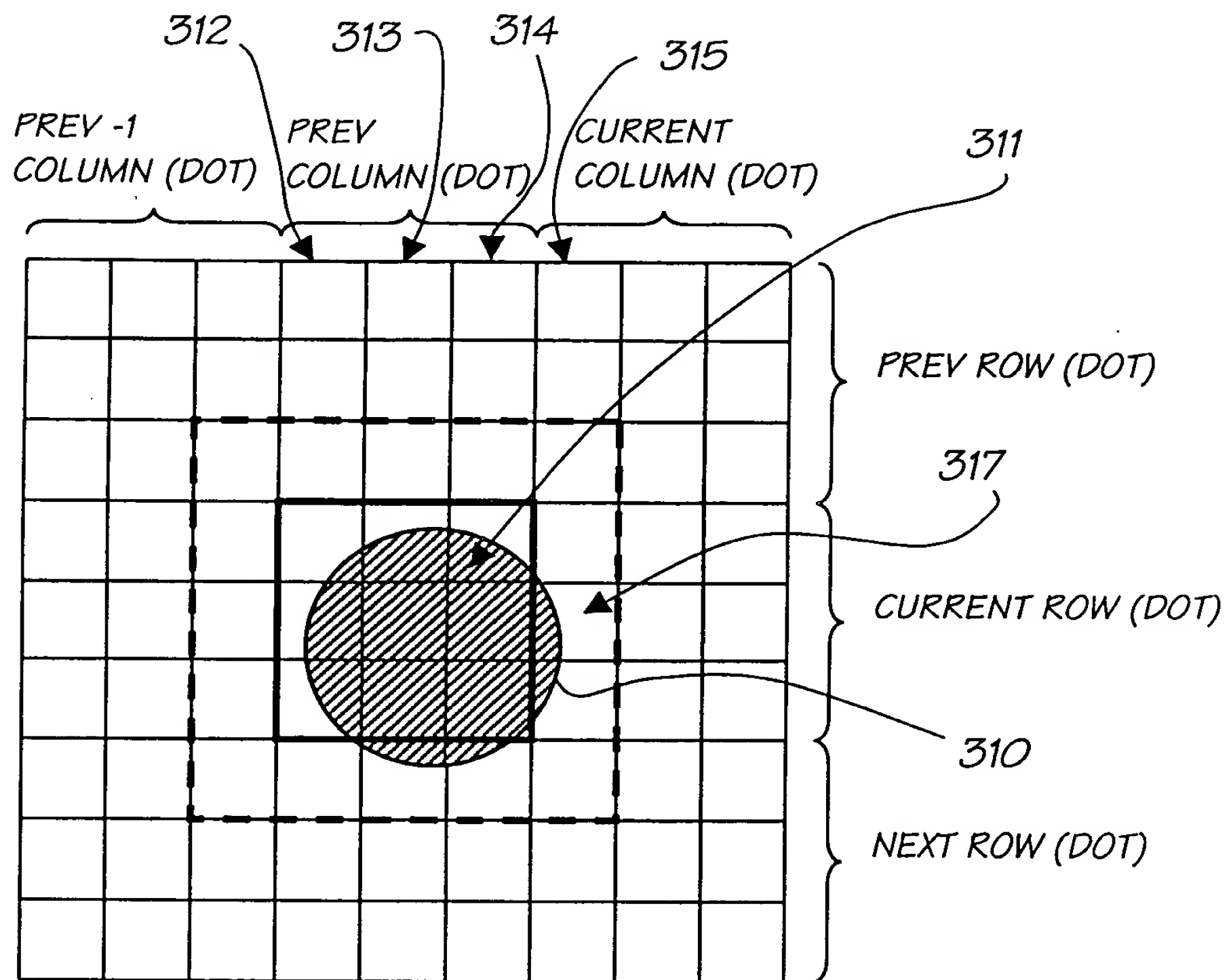


FIG. 44

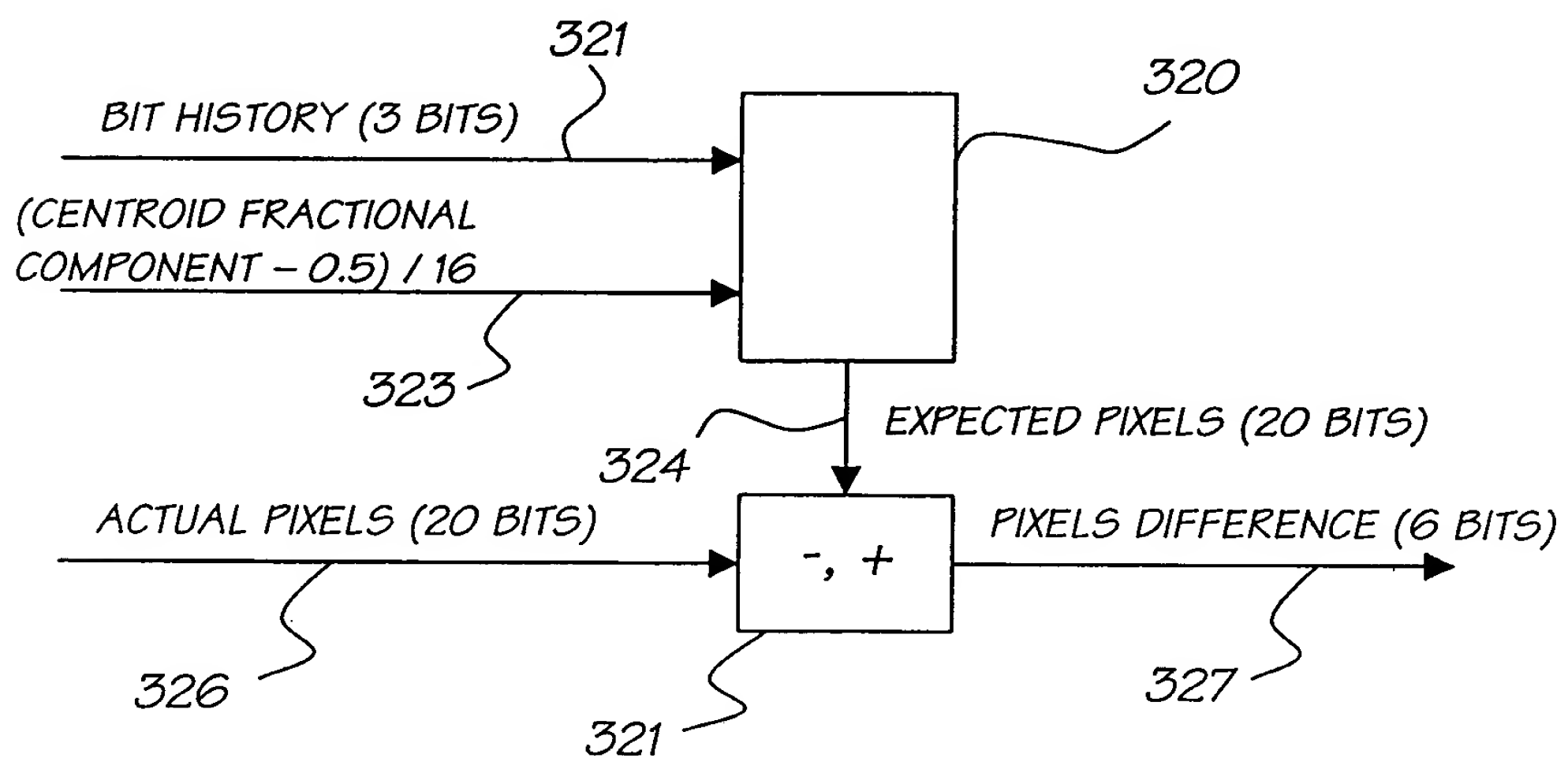


FIG. 45

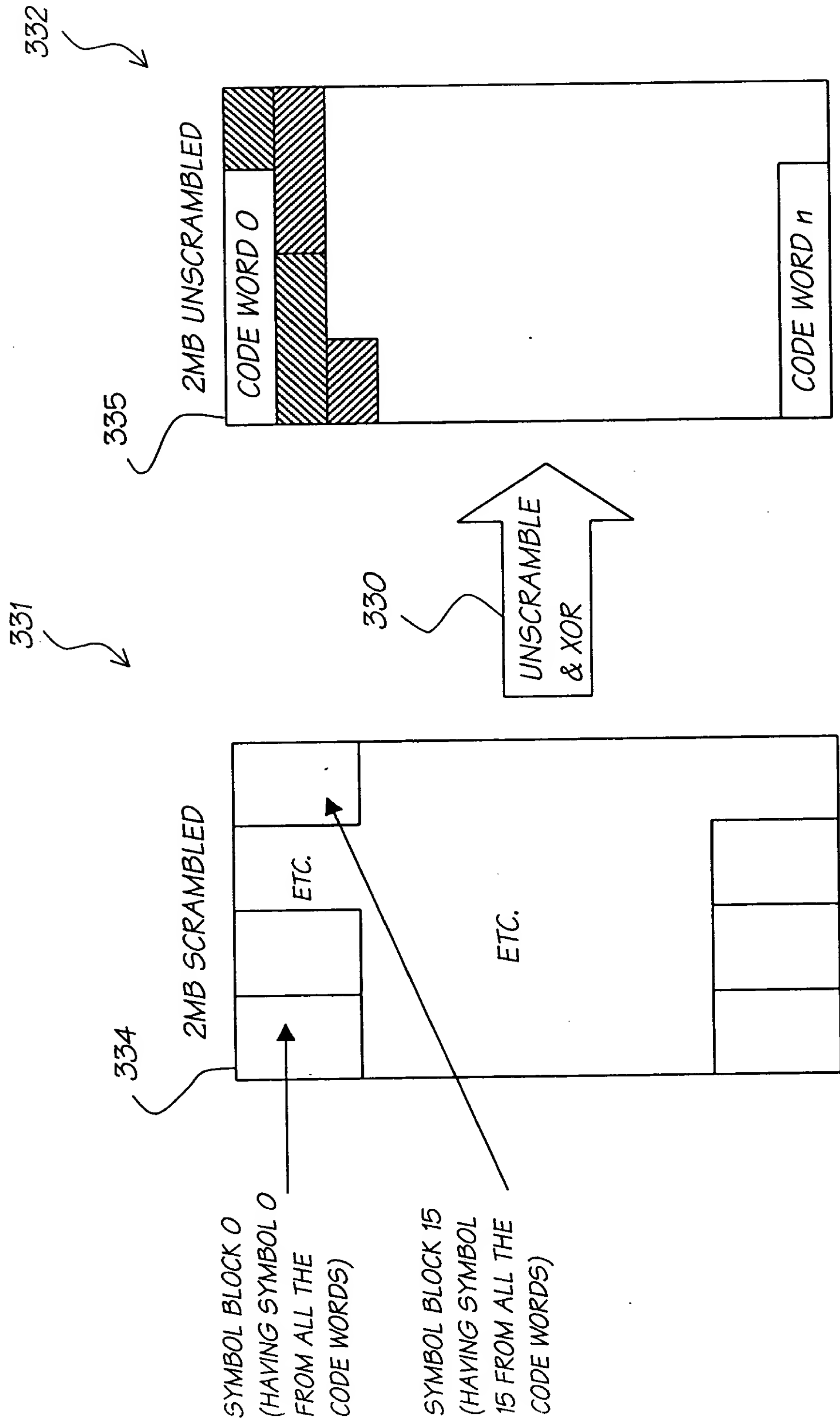
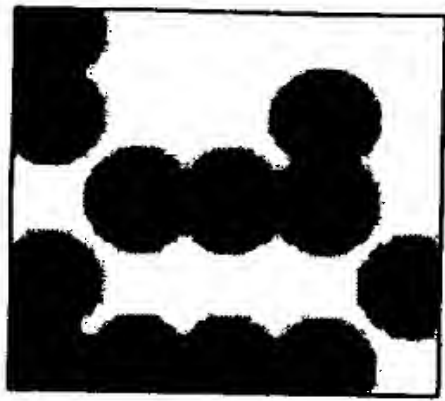
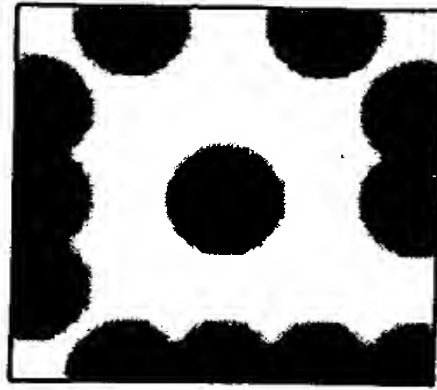


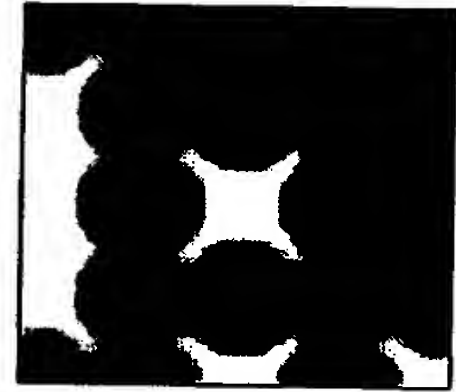
FIG. 46



BLACK AND WHITE  
DOTS



BLACK DOT  
SURROUNDED  
BY WHITE



WHITE DOT  
SURROUNDED  
BY BLACK

FIG. 47

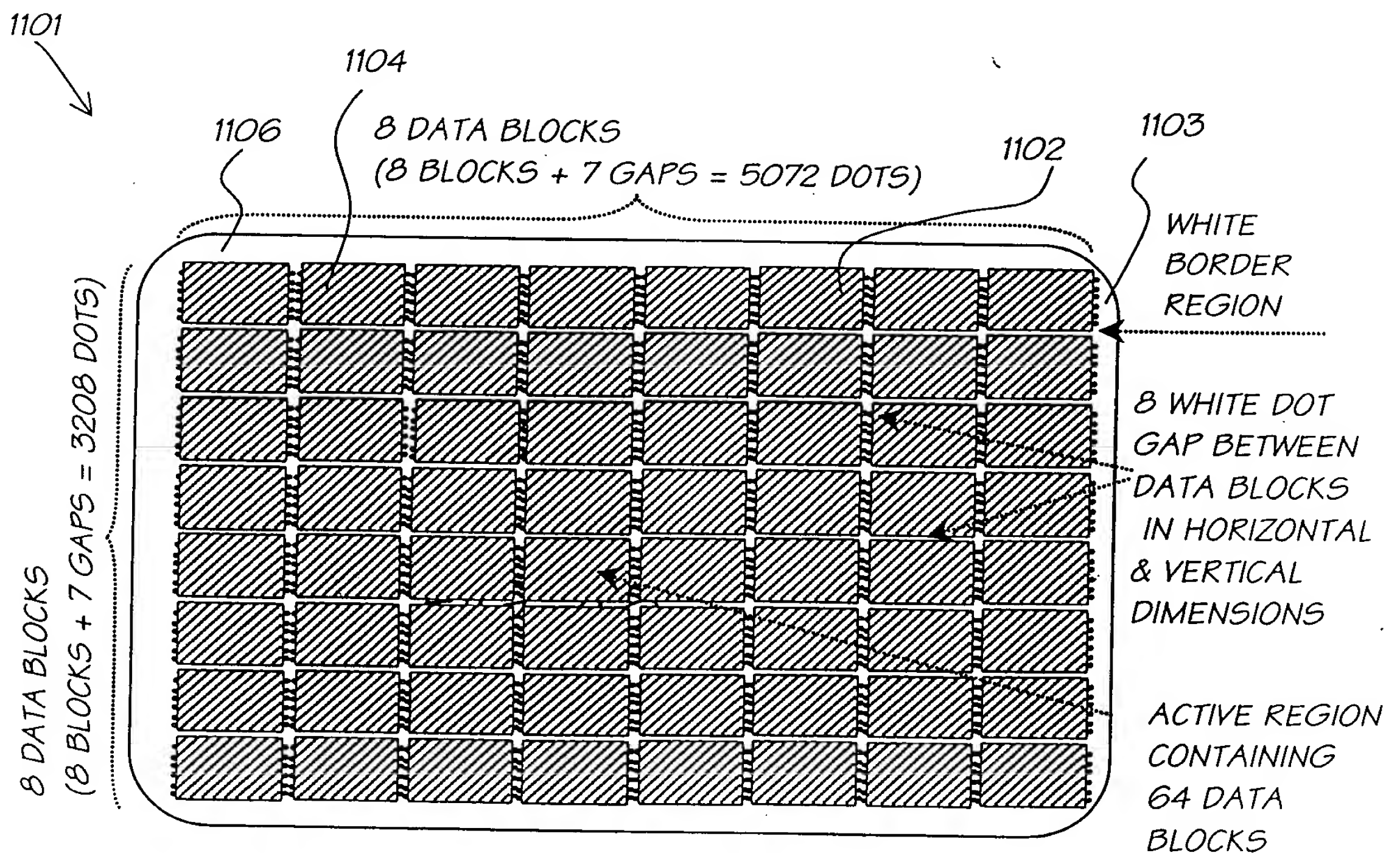


FIG. 48

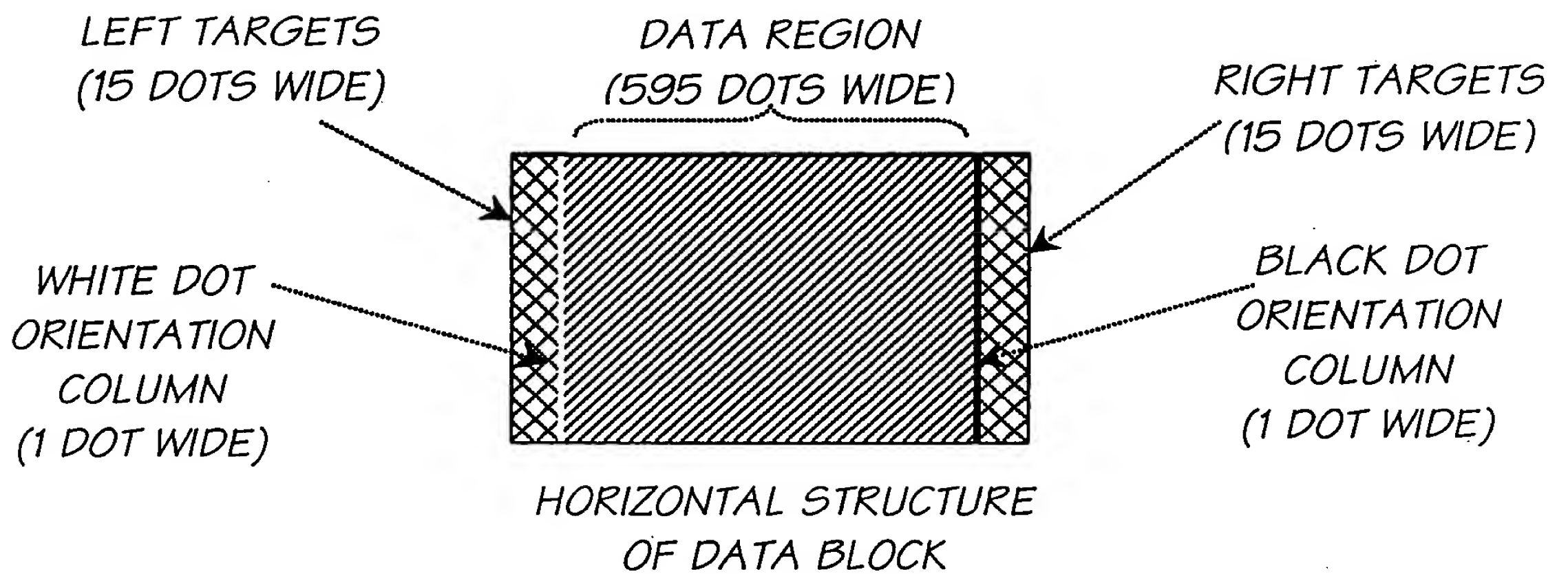
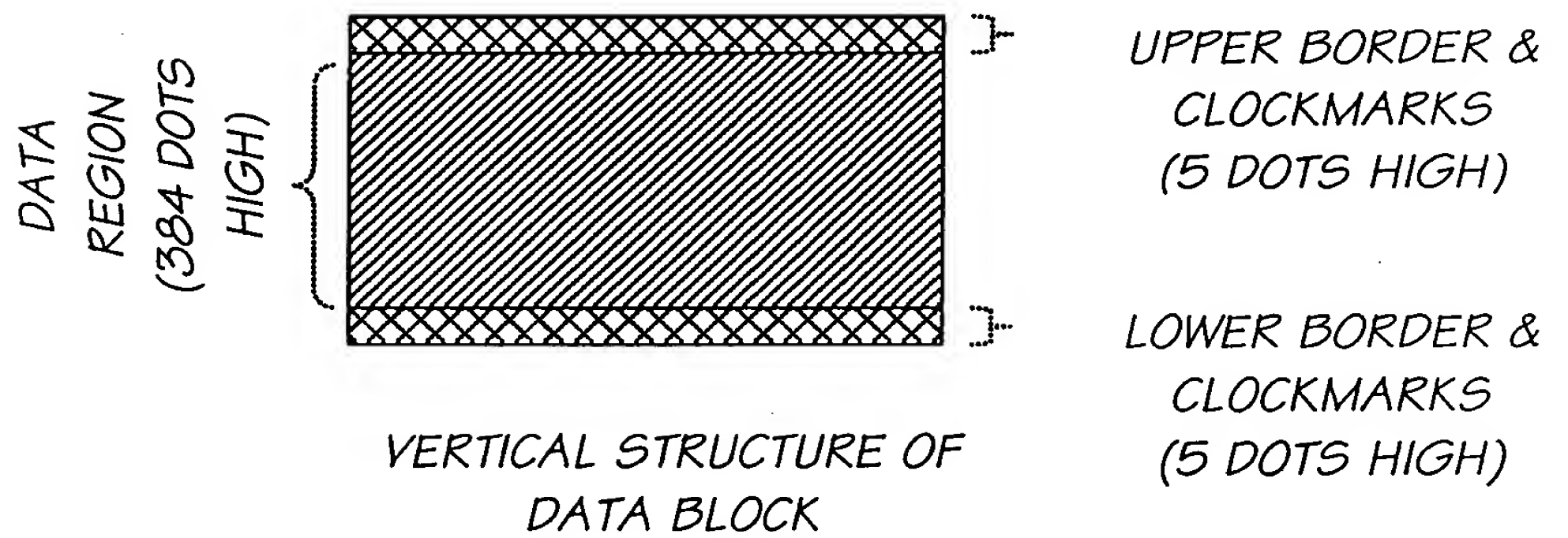
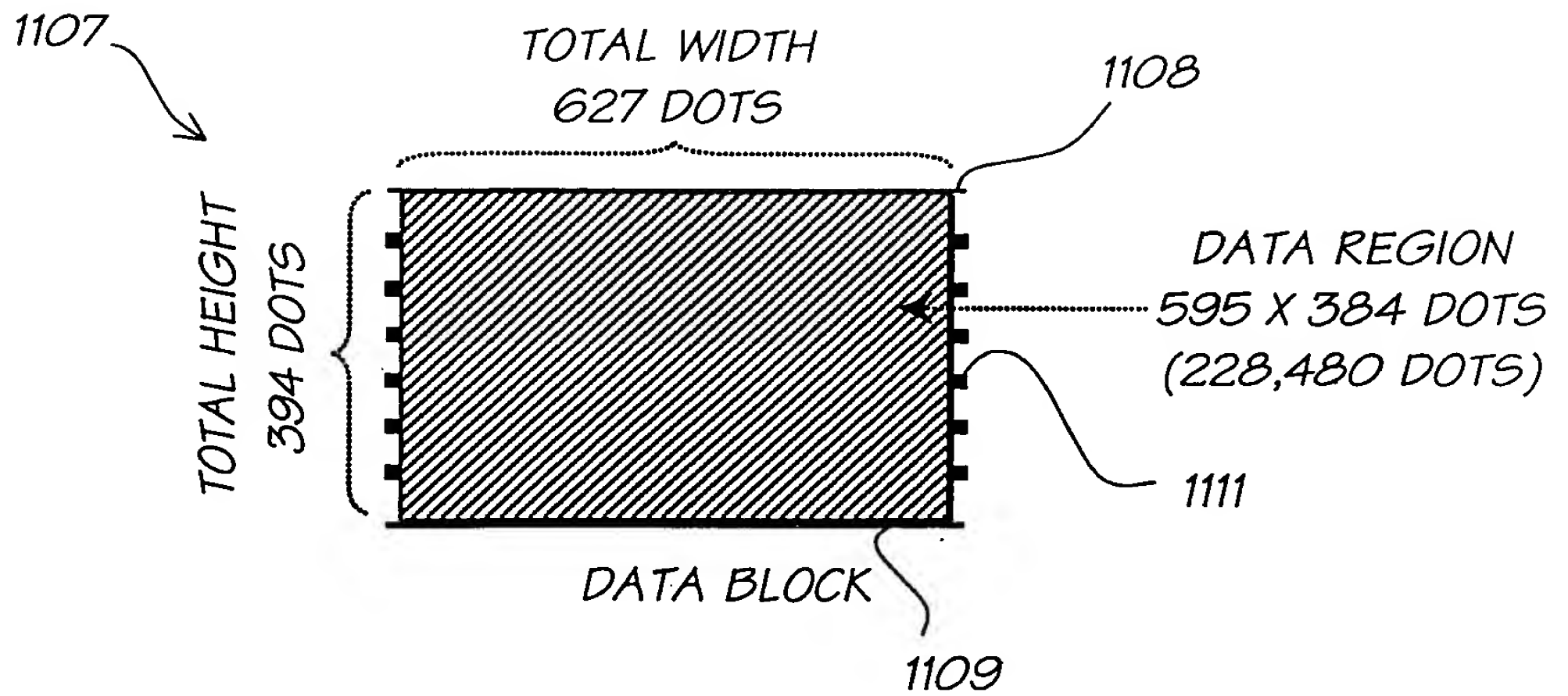


FIG. 49

FIG. 50

FIG. 51

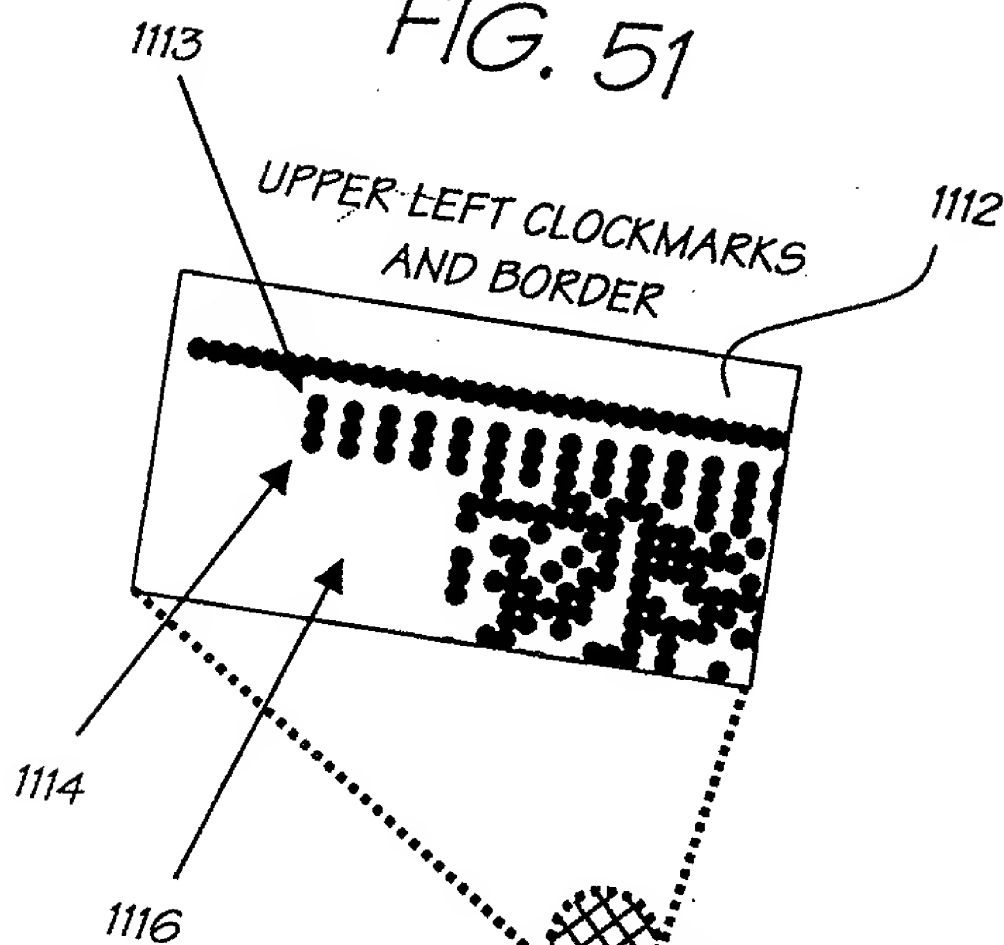


FIG. 52

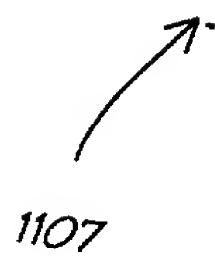
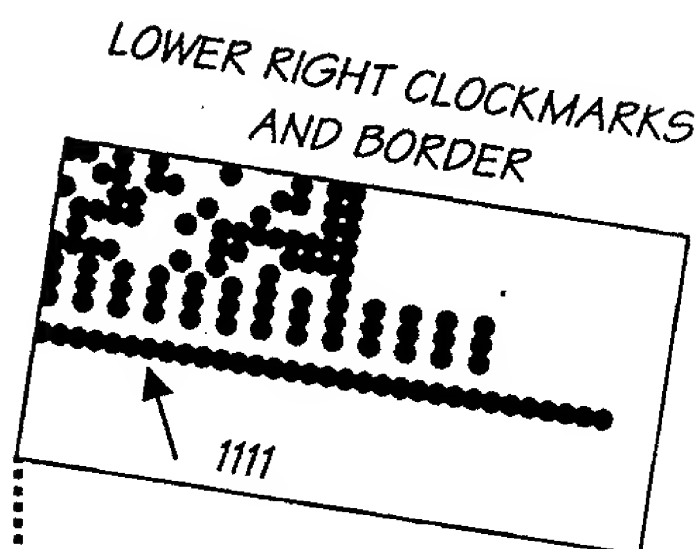


FIG. 50



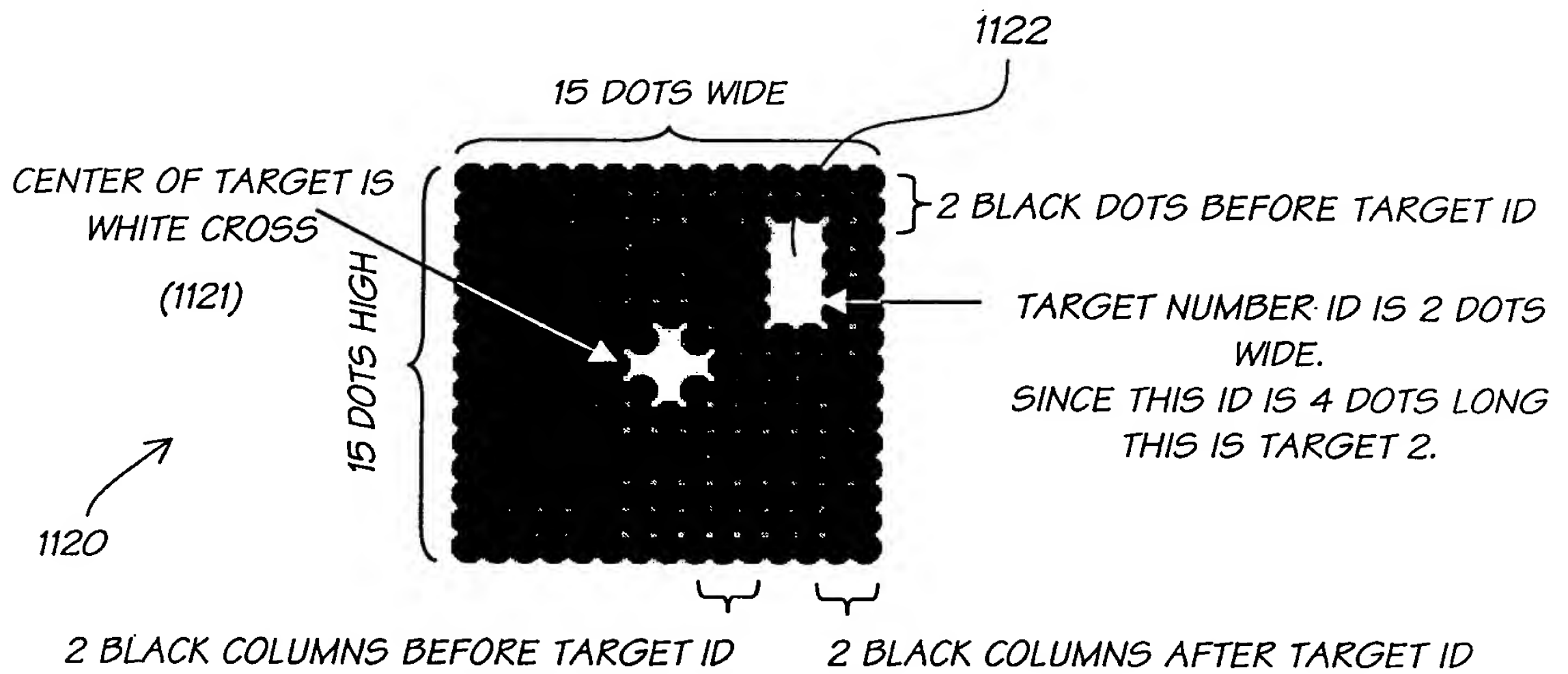


FIG. 53

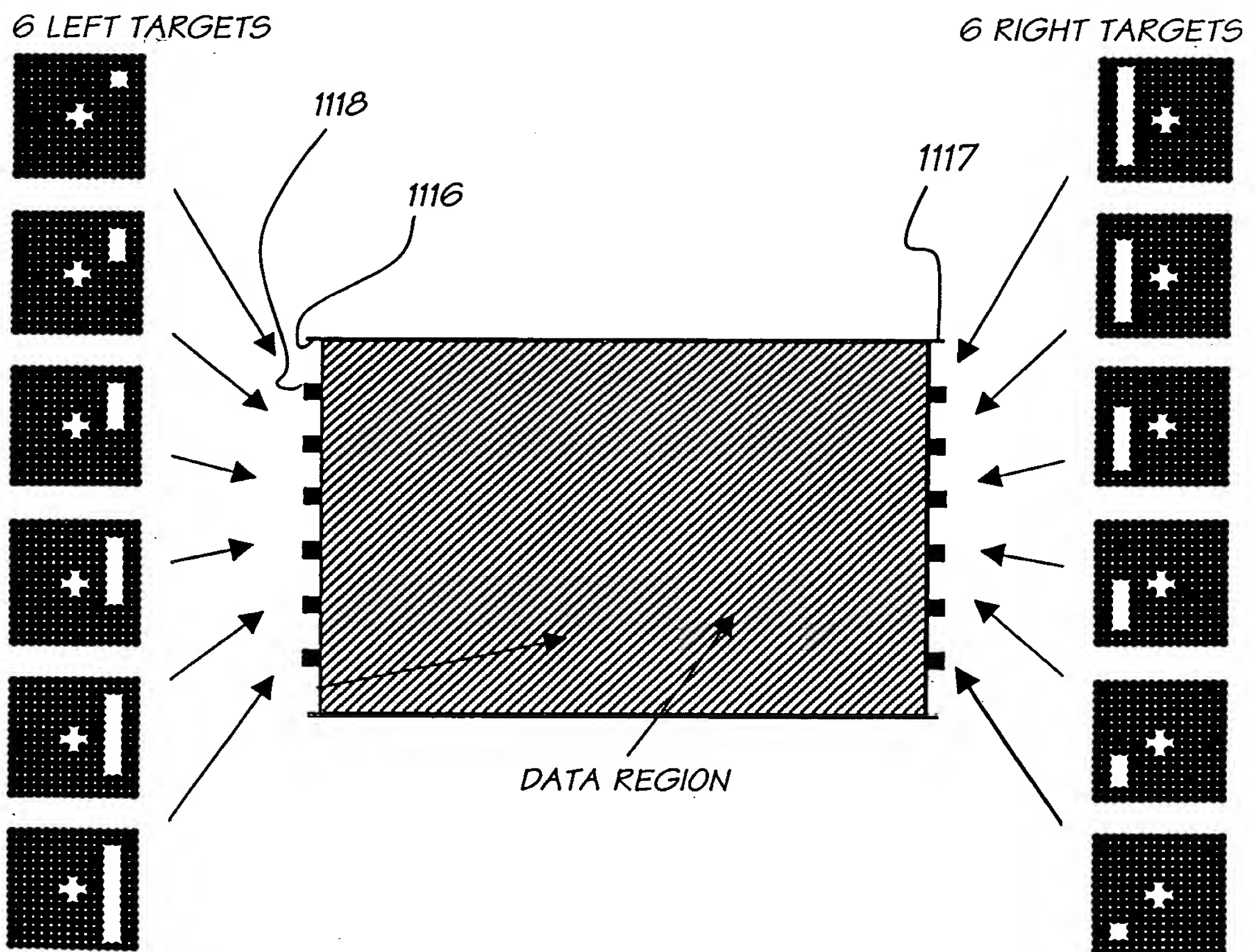


FIG. 54



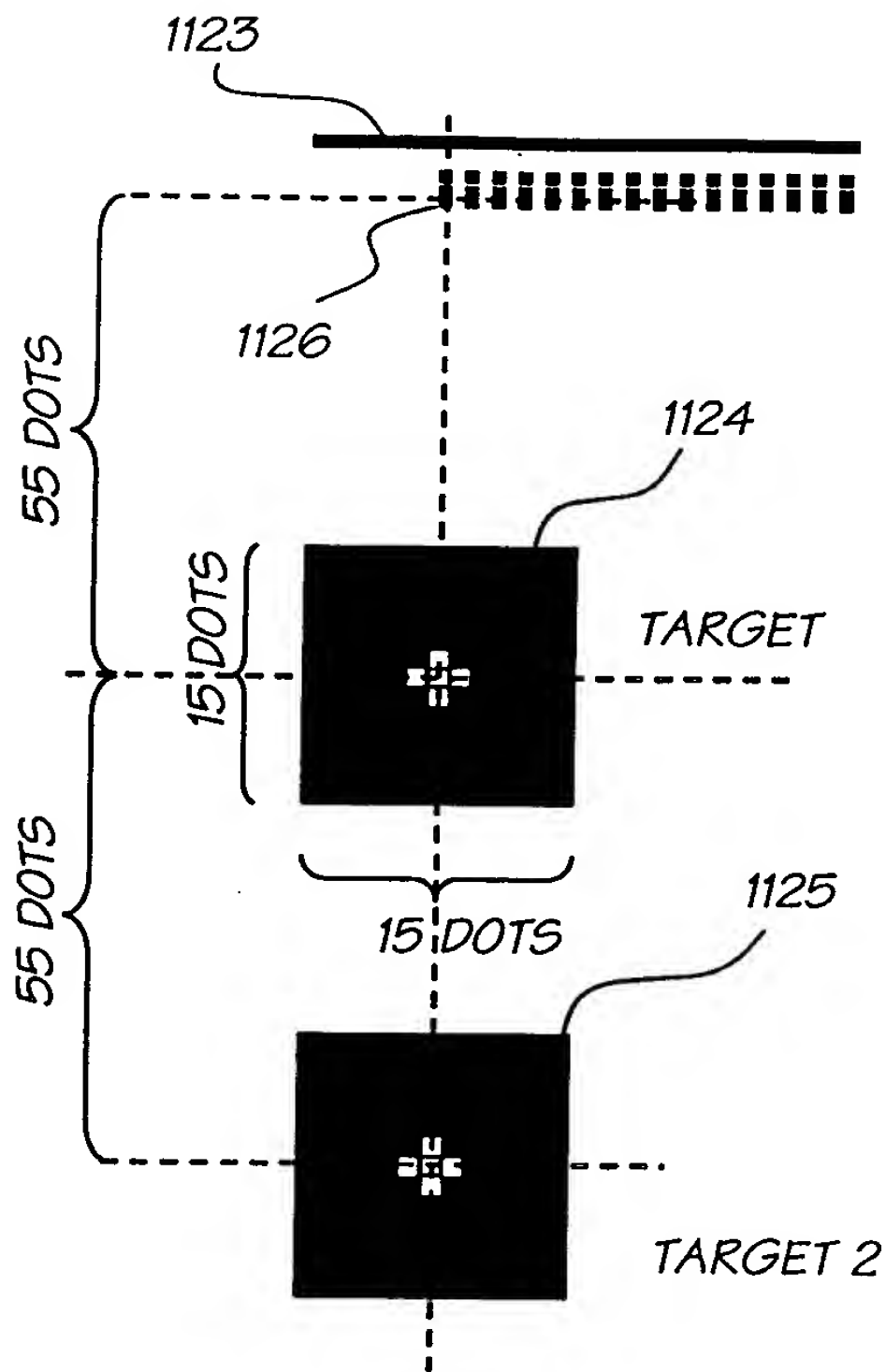


FIG. 55

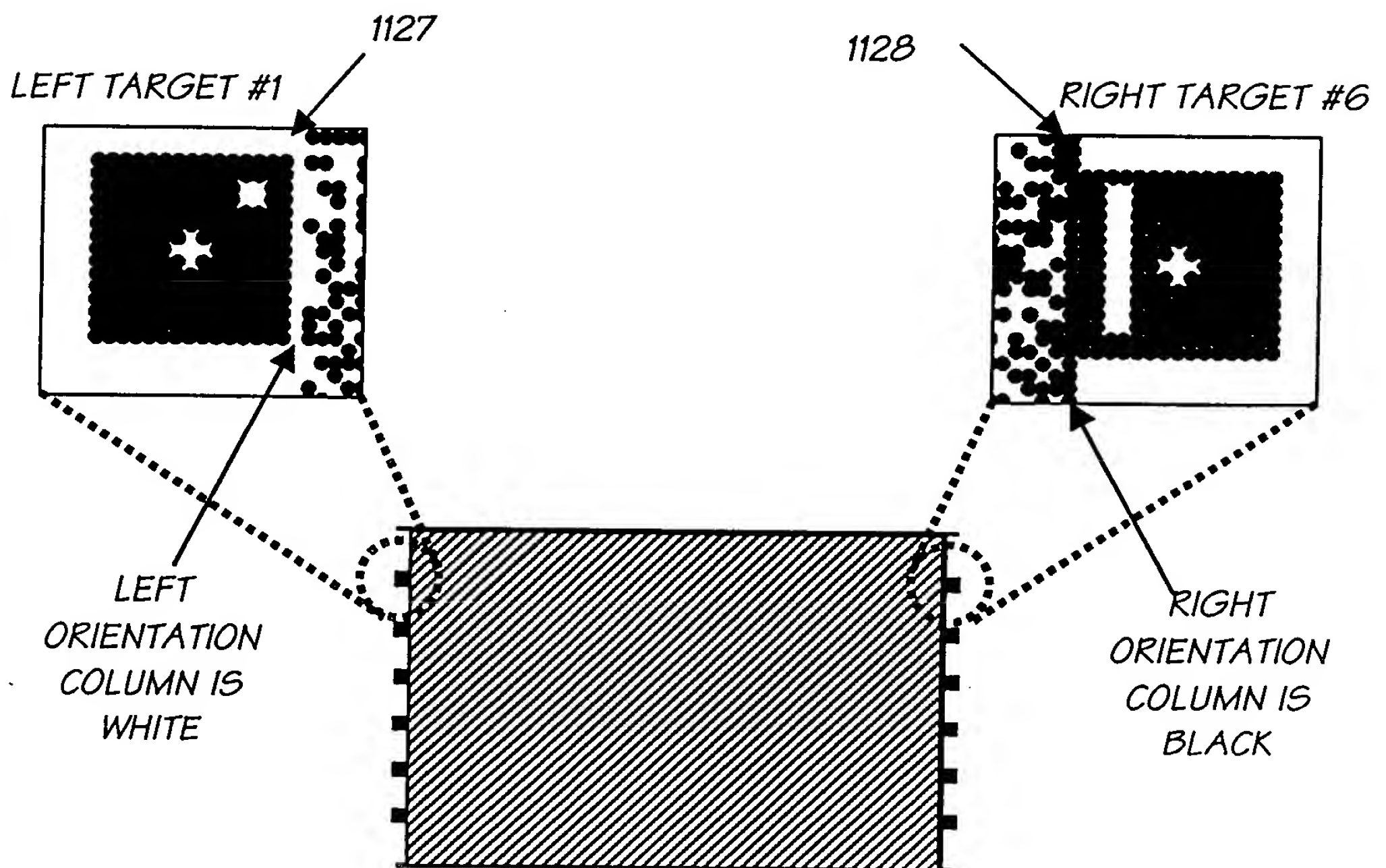


FIG. 56

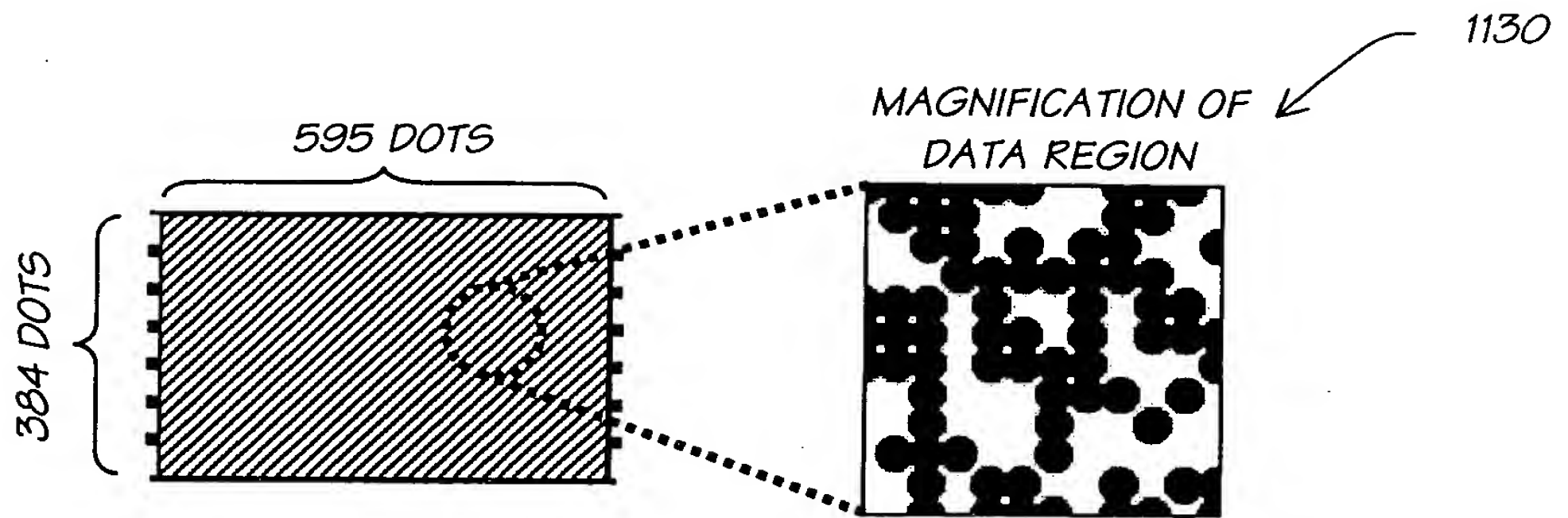


FIG. 57

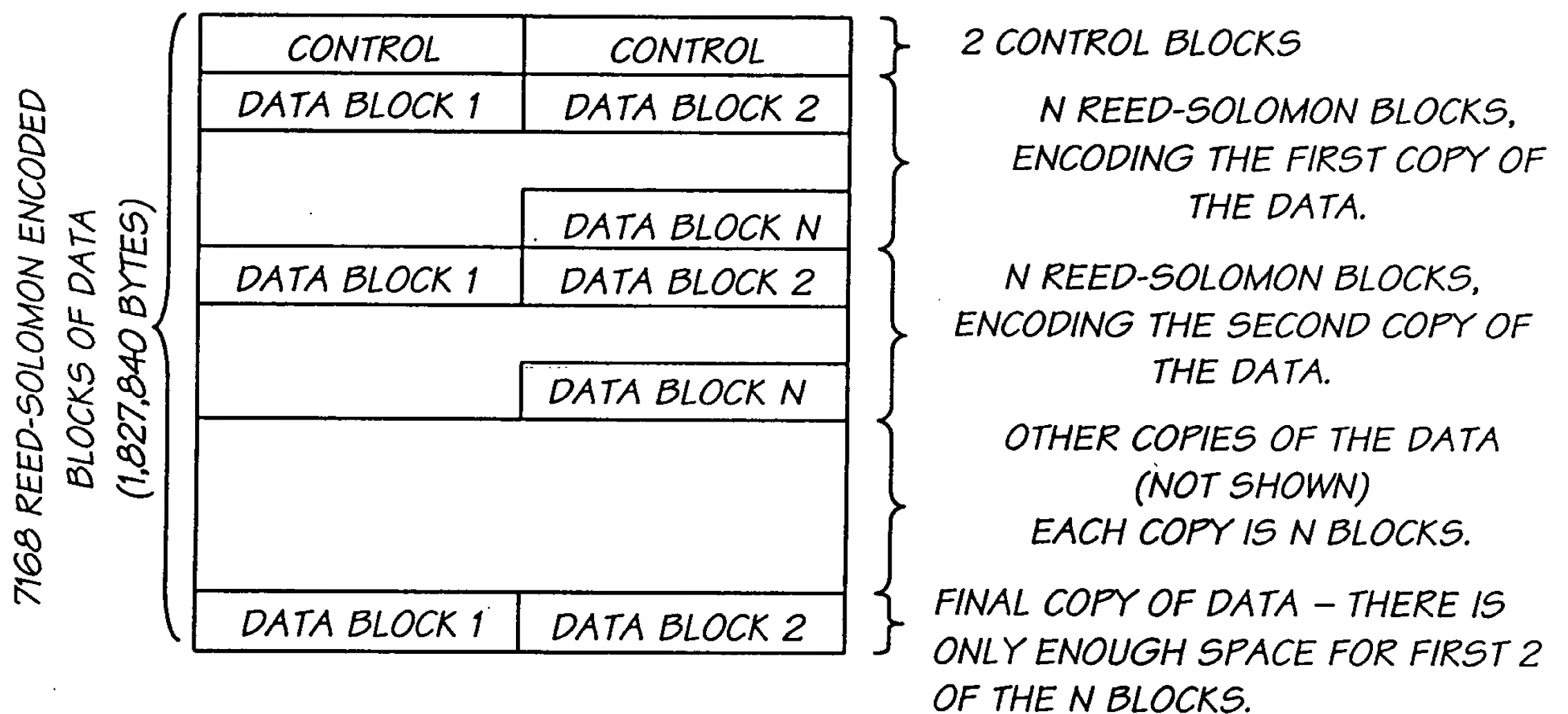


FIG. 58

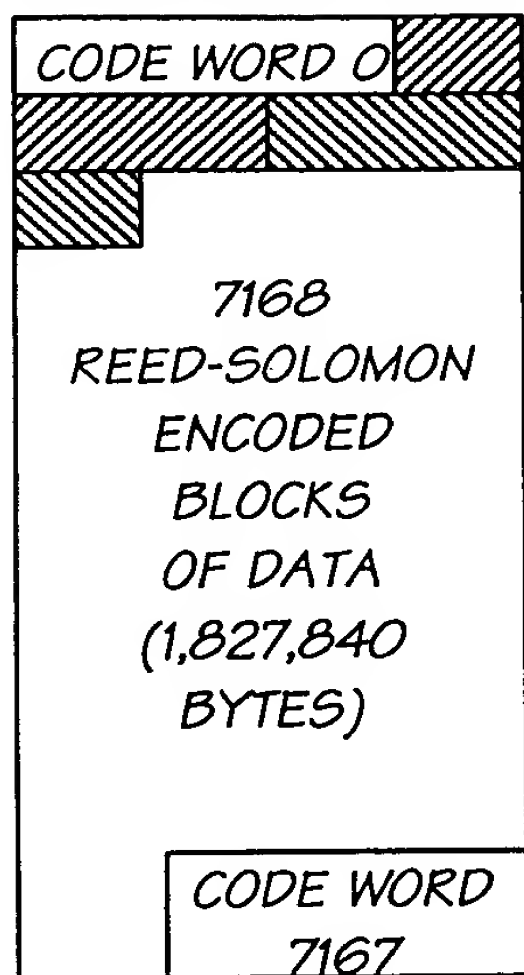
00:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
0C:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
18:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
24:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
30:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
3C:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
48:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
54:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
60:	00	00	00	00	00	00	00	00	00	00	00	00
6C:	00	00	00	00	00	00	00	00	00	00	00	00
78:	00	00	00	00	00	00	00	00	00	00	00	00

32 COPIES OF THE  
3 BYTE CONTROL  
INFORMATION

RESERVED  
BYTES ARE 0

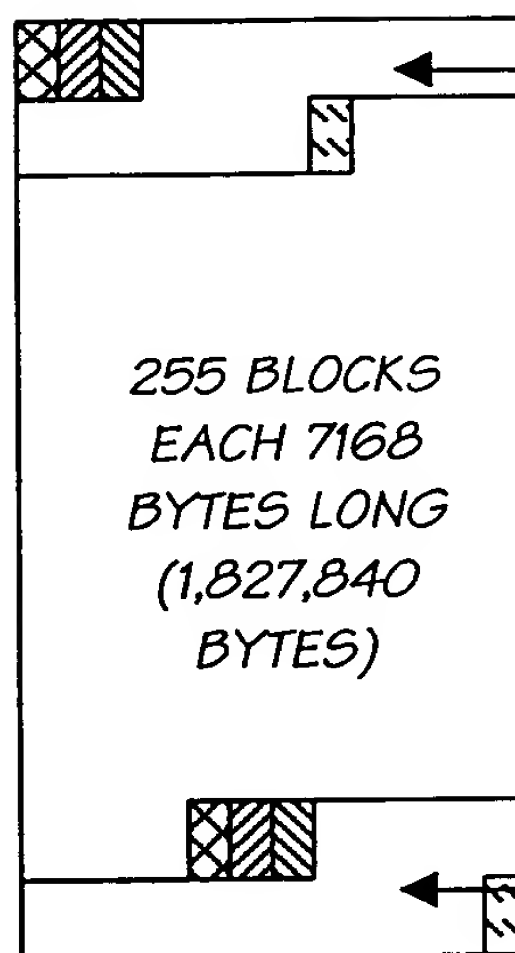
FIG. 59

UNSCRAMBLED DATA



SCRAMBLE

SCRAMBLED DATA



ALL THE BYTE 0'S FROM THE 7168 CODE WORDS

ALL THE BYTE 255'S FROM THE 7168 CODE WORDS

FIG. 60

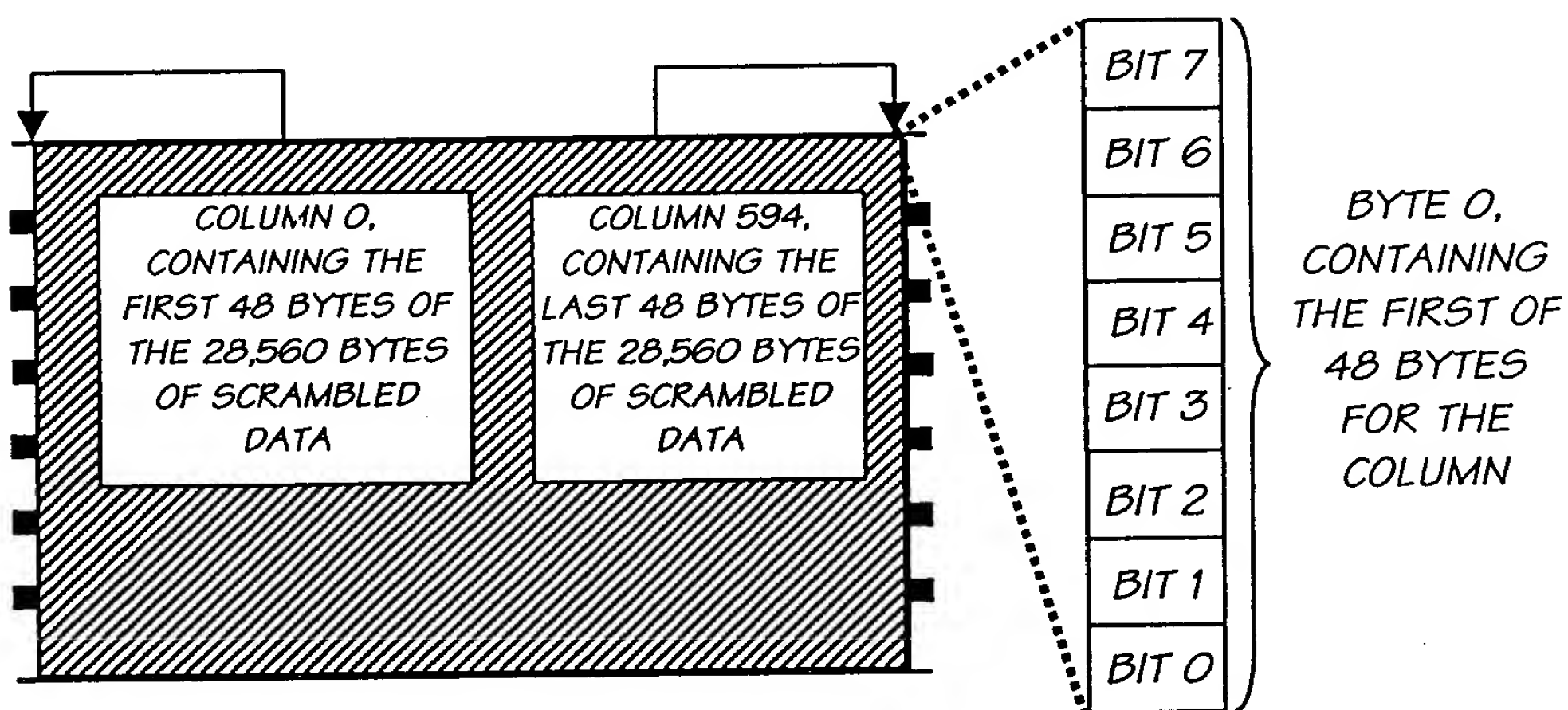


FIG. 61

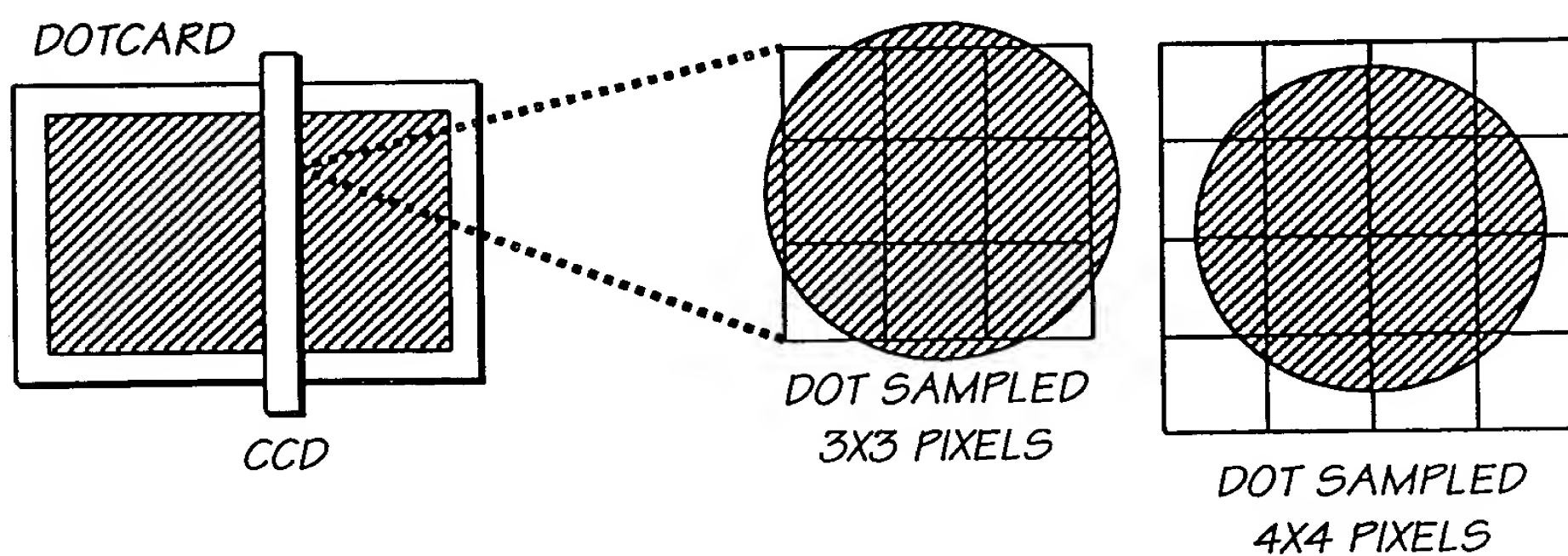


FIG. 62

FIG. 63 is a schematic diagram of a CCD array showing the drift of dots across the columns of pixels, exaggerated.

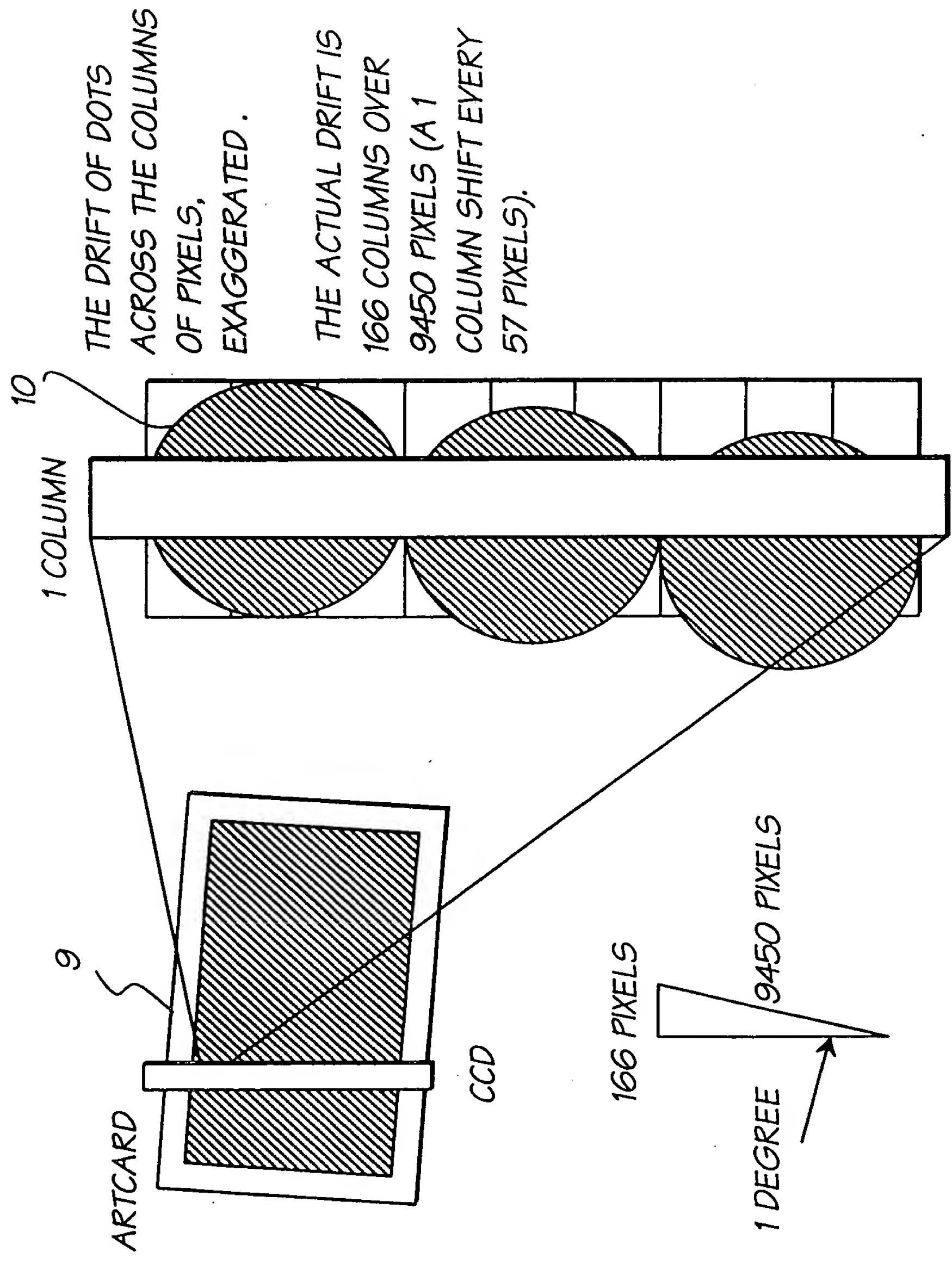


FIG. 63

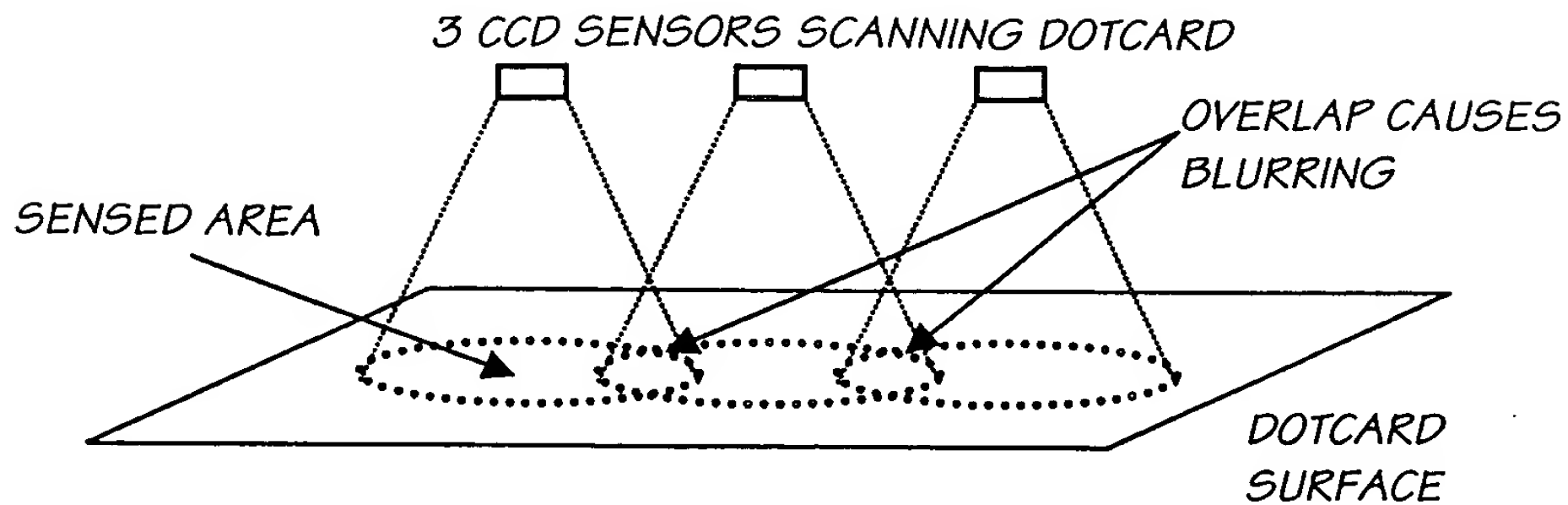


FIG. 64

RANGE OF BLACK DOTS  
(FREQUENCY DISTRIBUTION)

RANGE OF WHITE DOTS  
(FREQUENCY DISTRIBUTION)

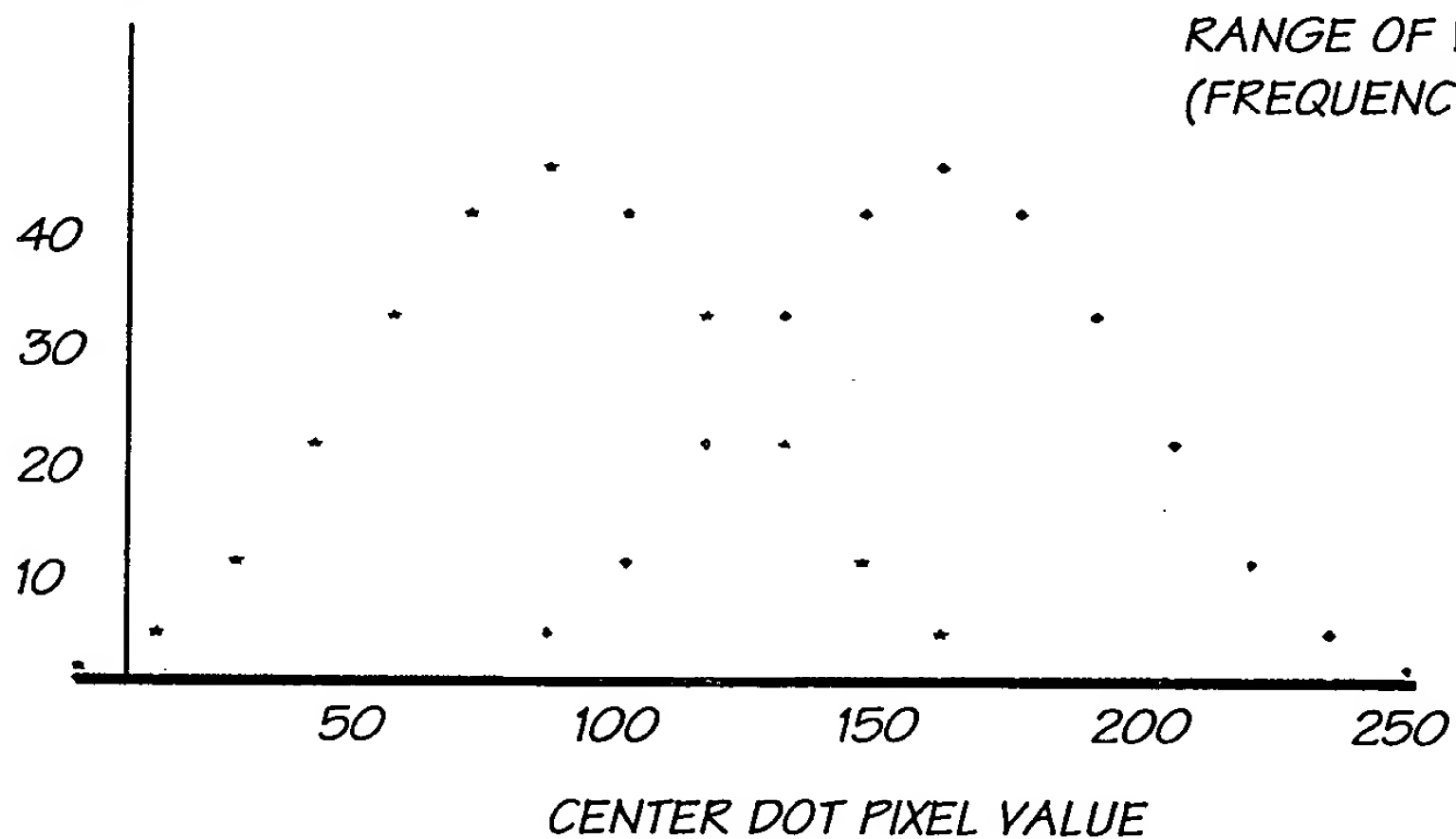


FIG. 65

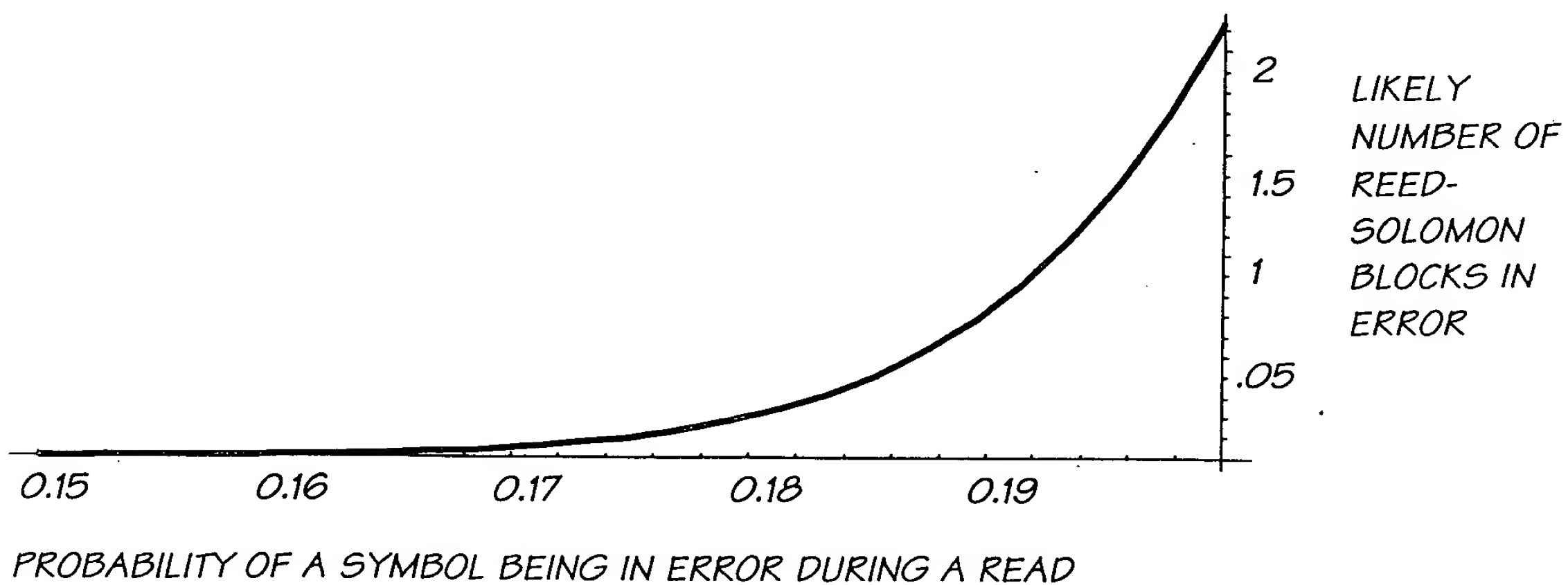


FIG. 66



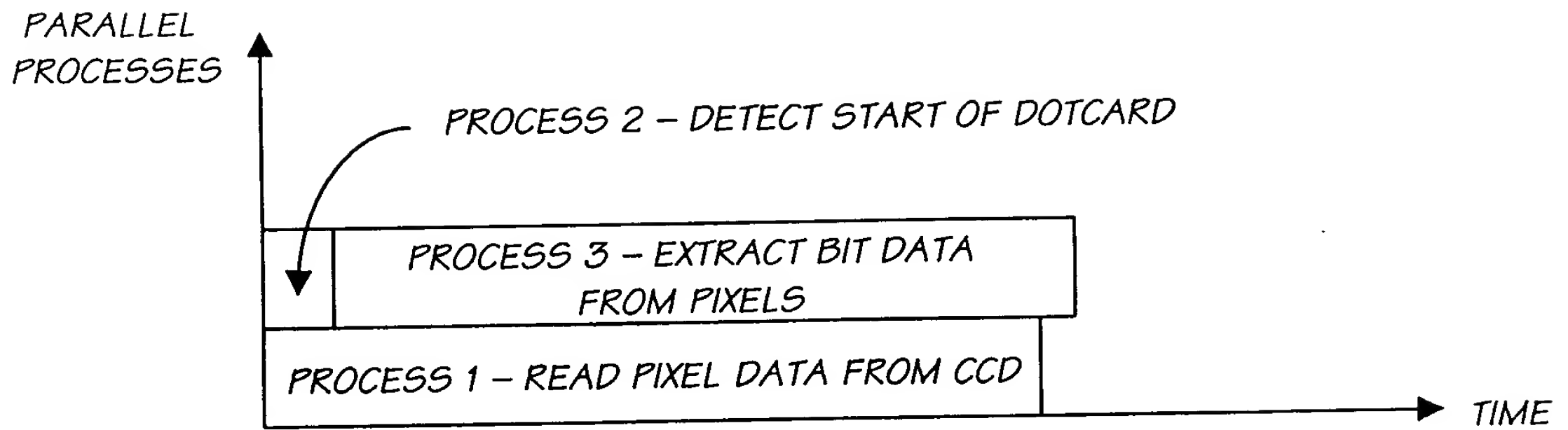


FIG. 68

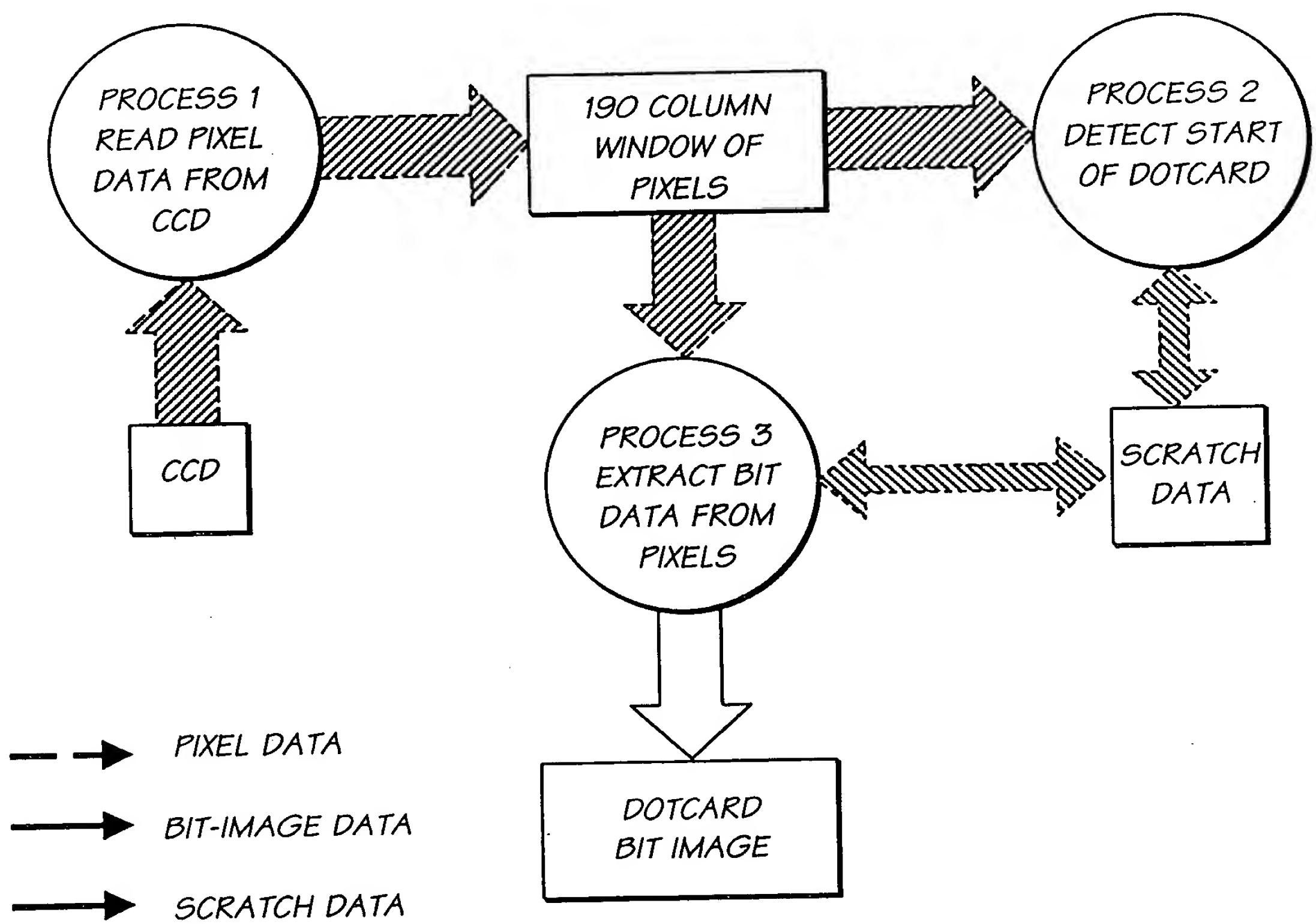


FIG. 69

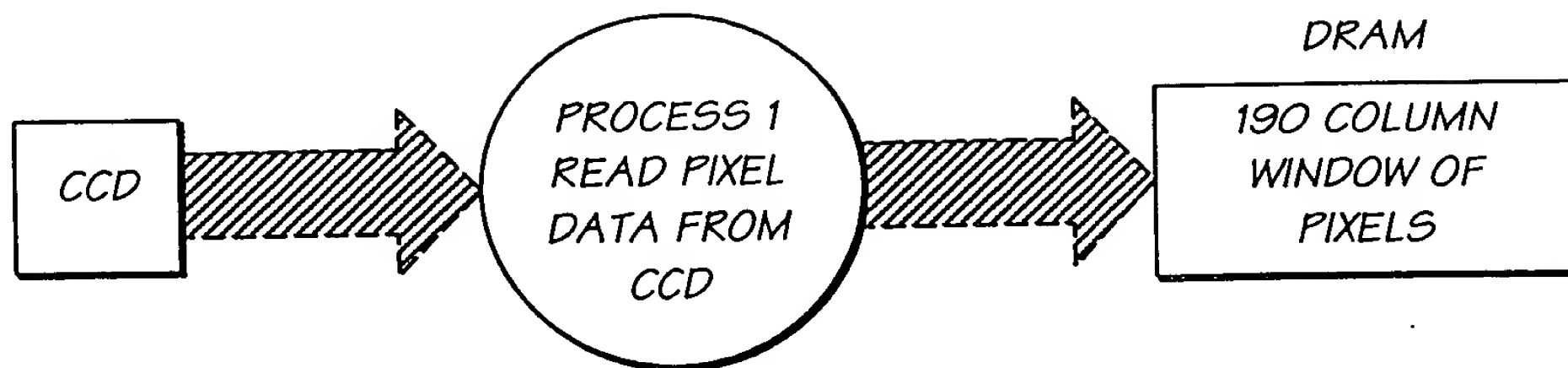


FIG. 70

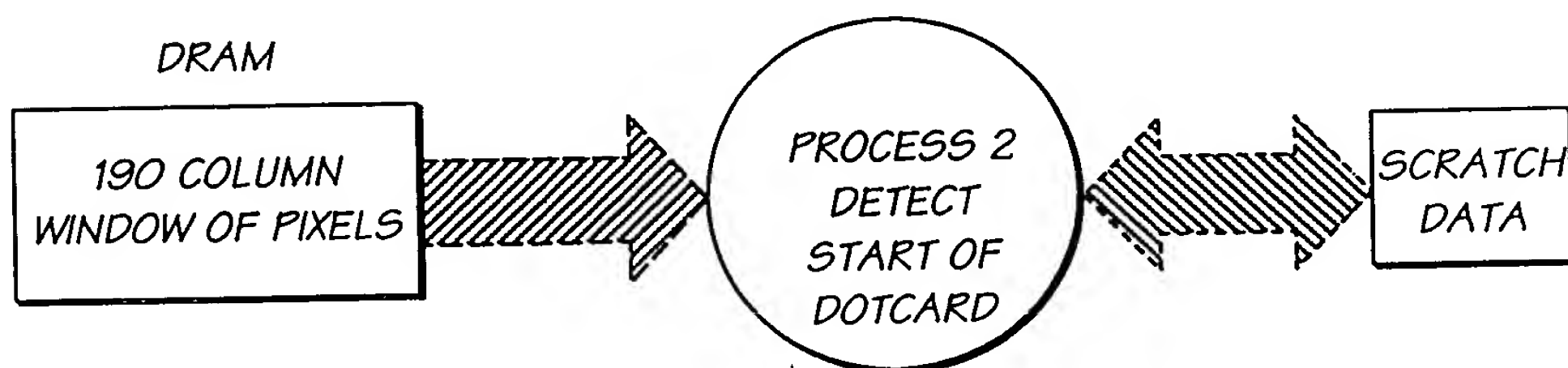


FIG. 71

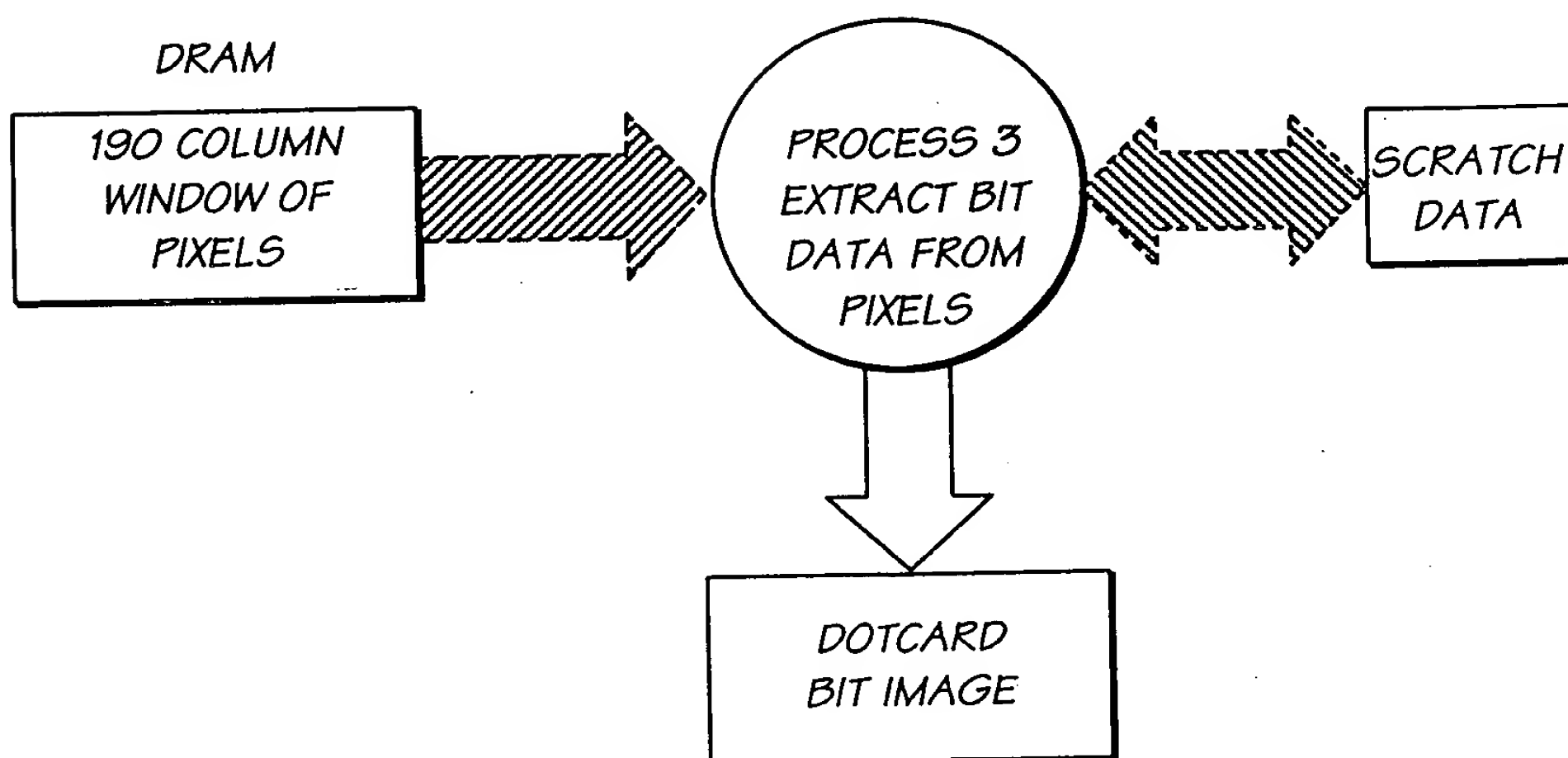


FIG. 72



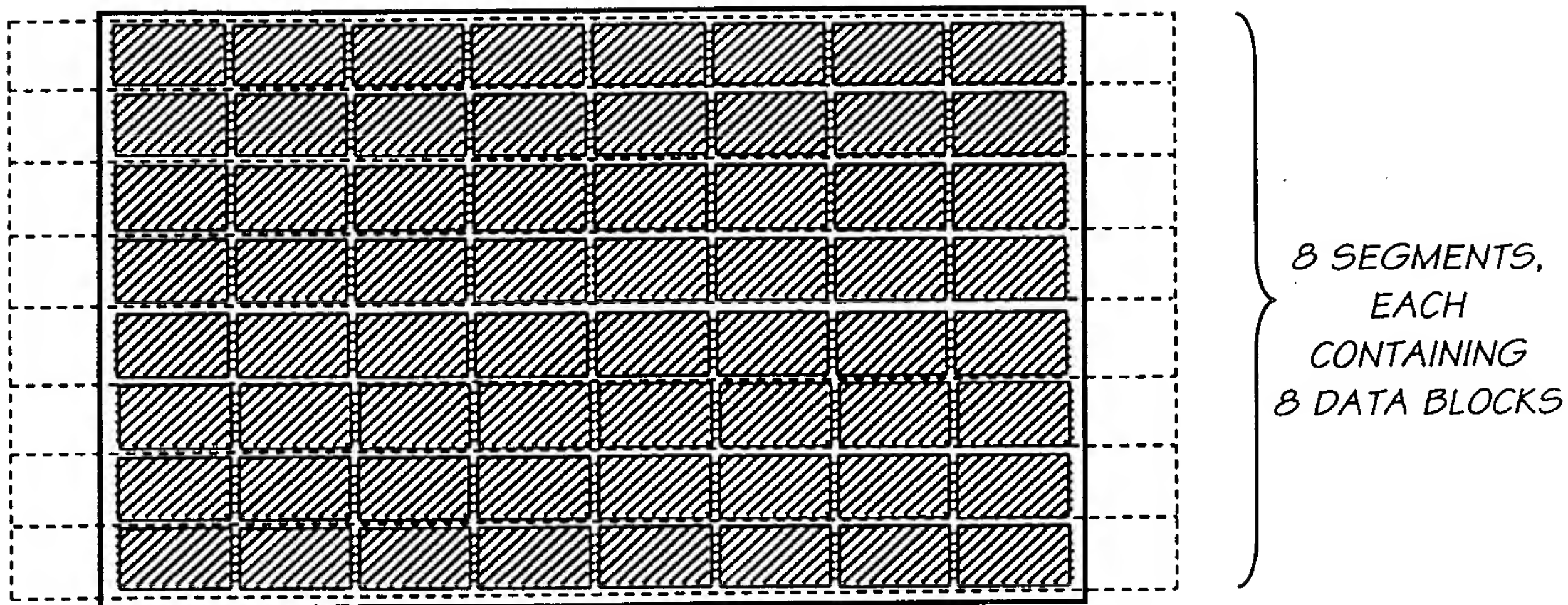


FIG. 73

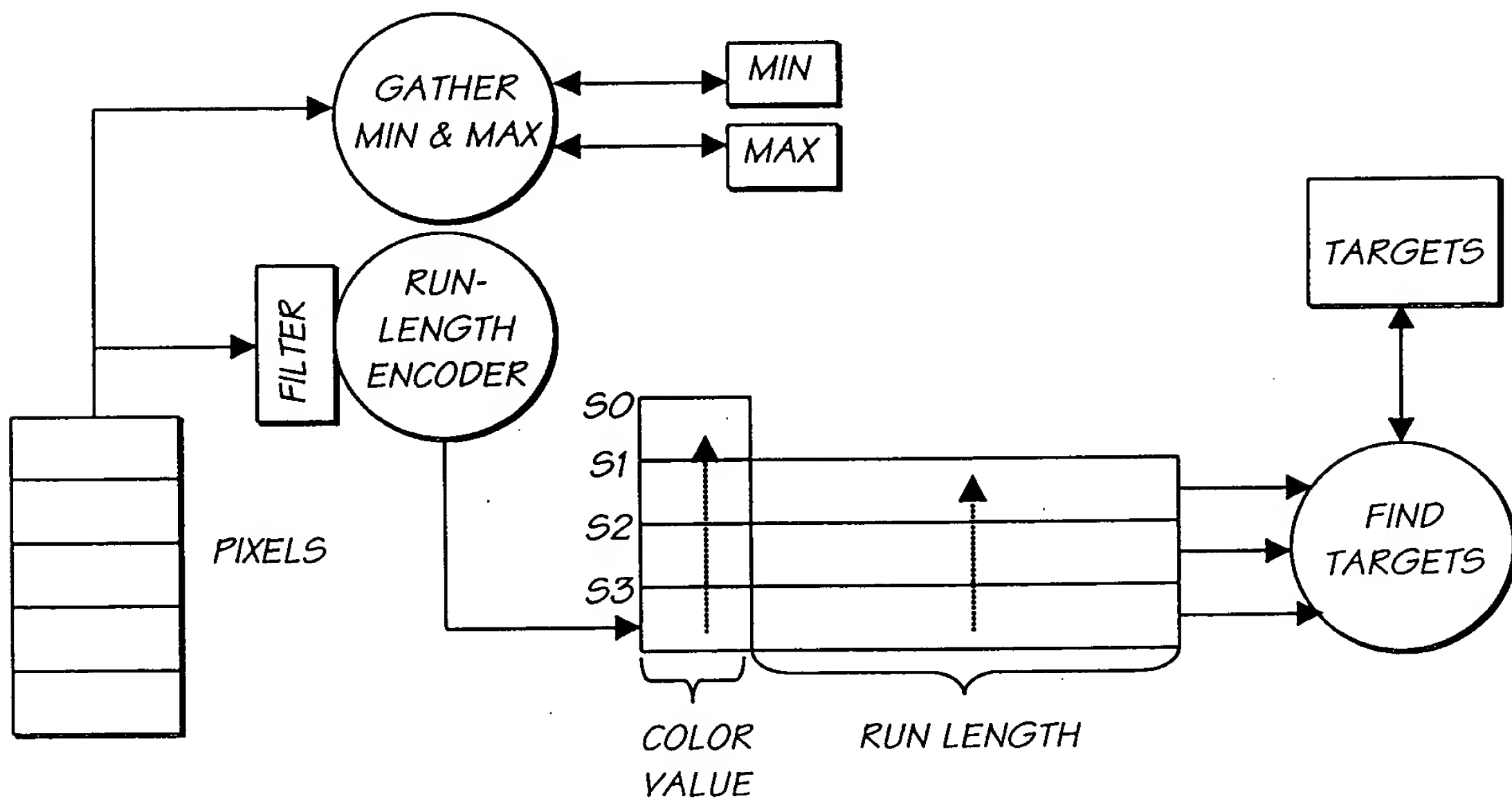


FIG. 74

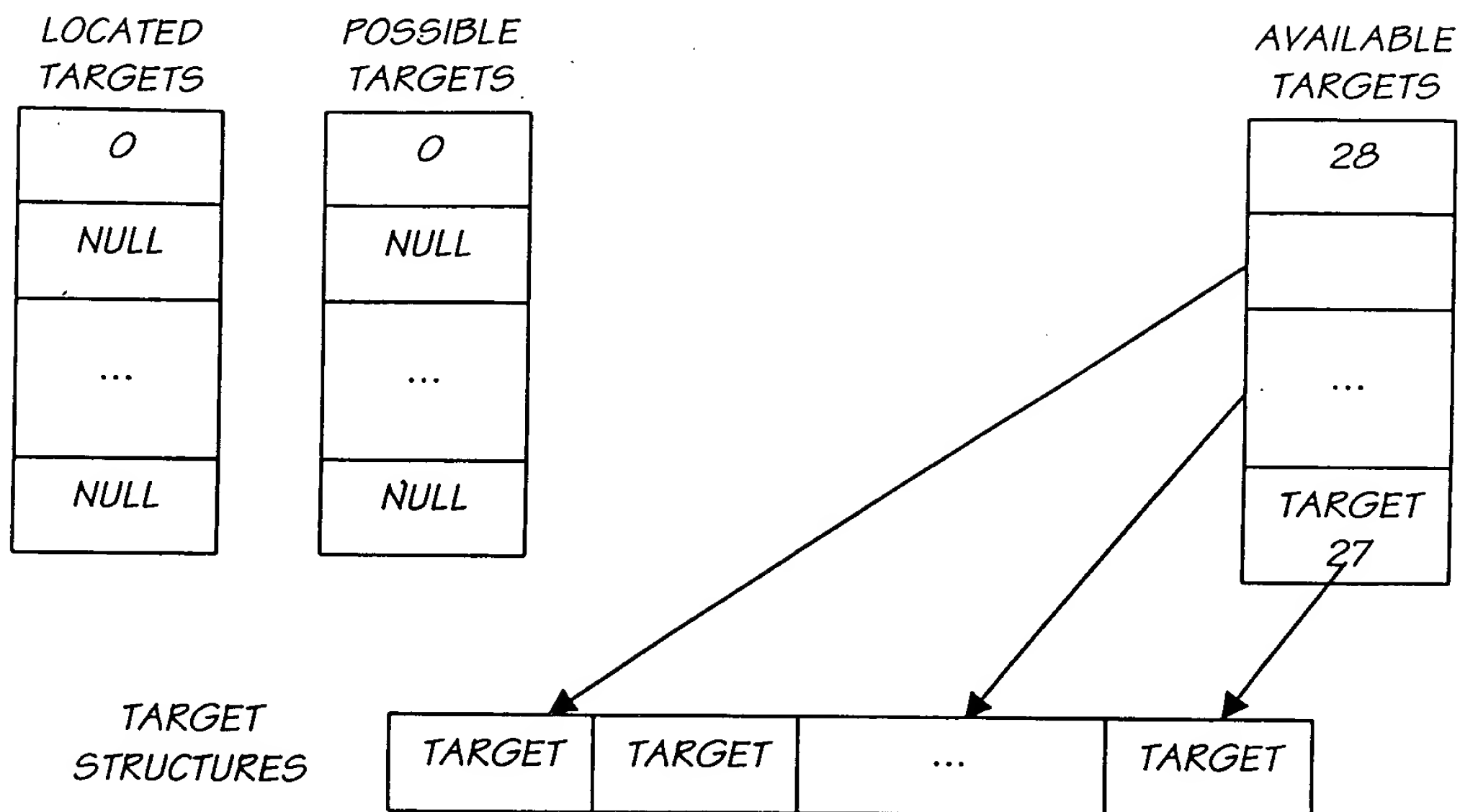


FIG. 75

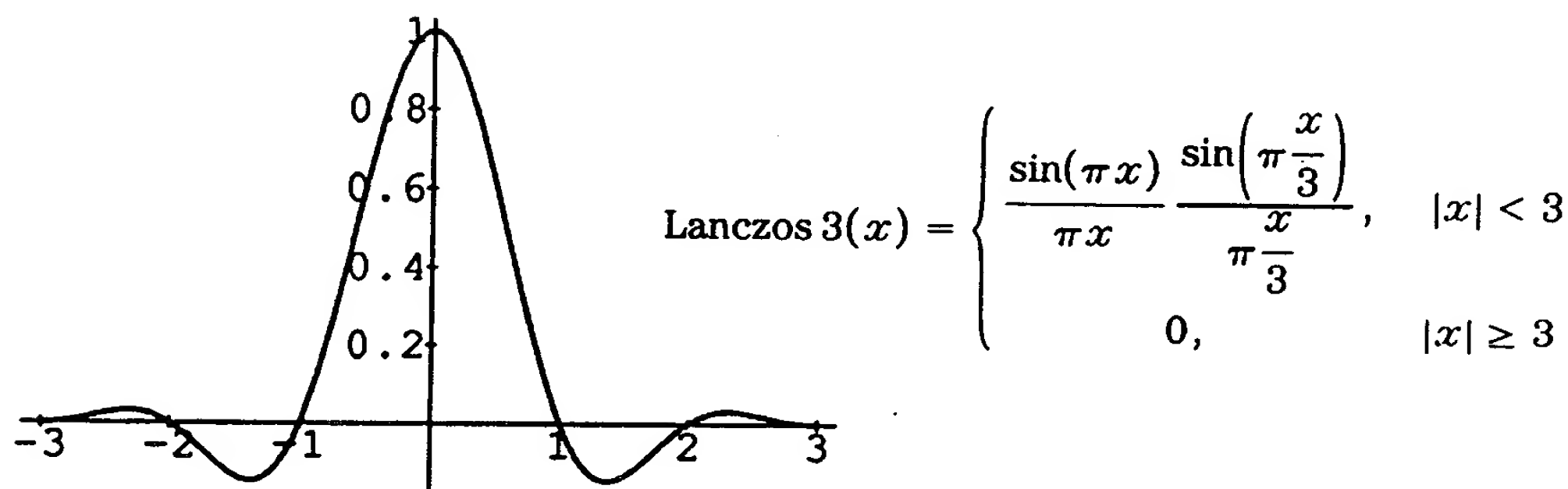


FIG. 76

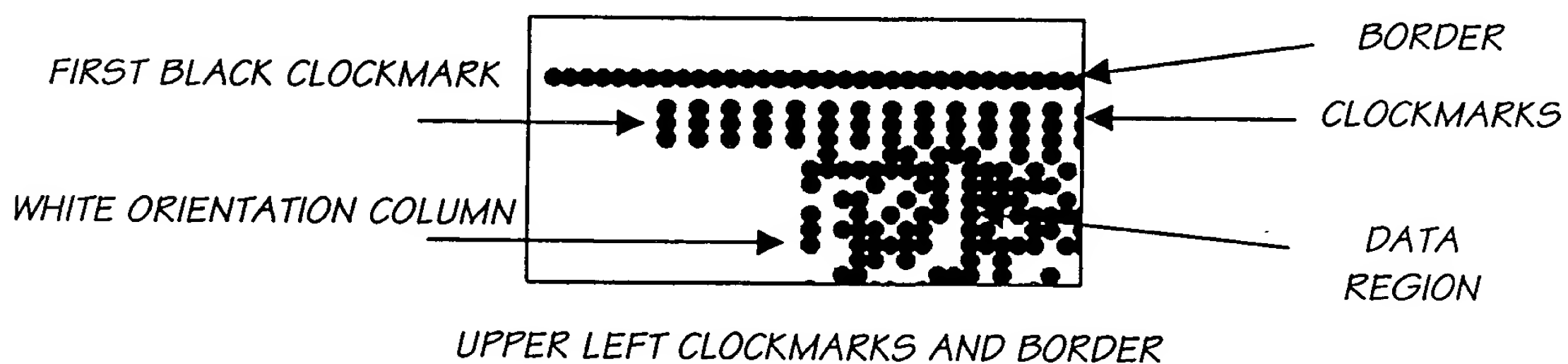


FIG. 77

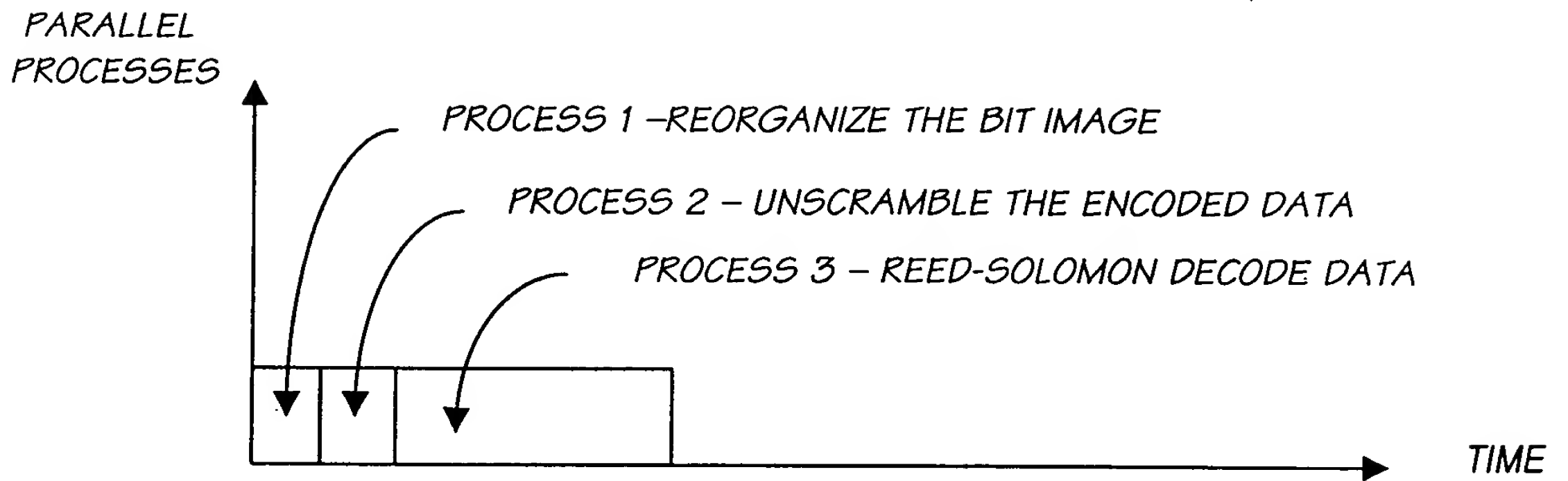


FIG. 78

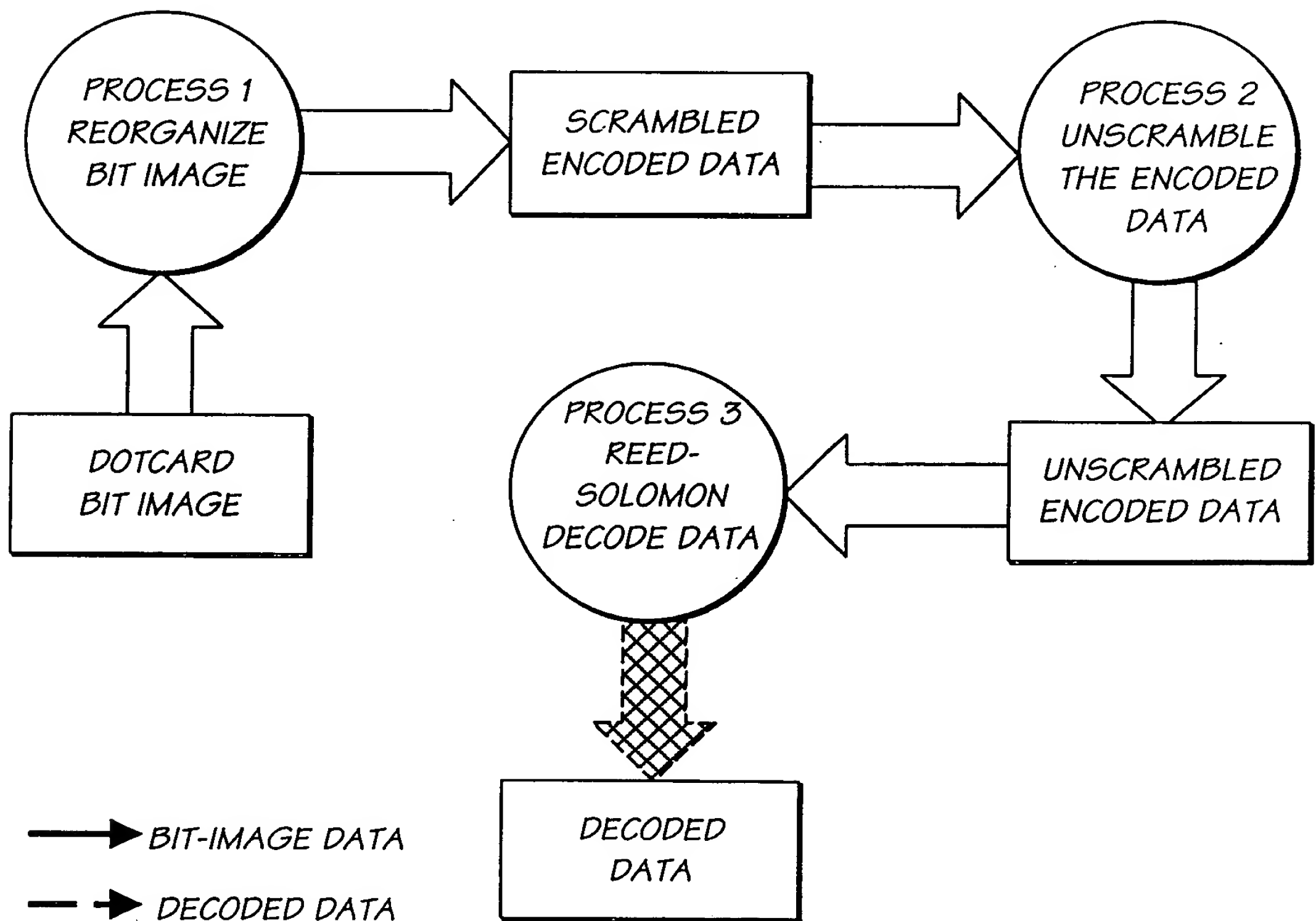


FIG. 79

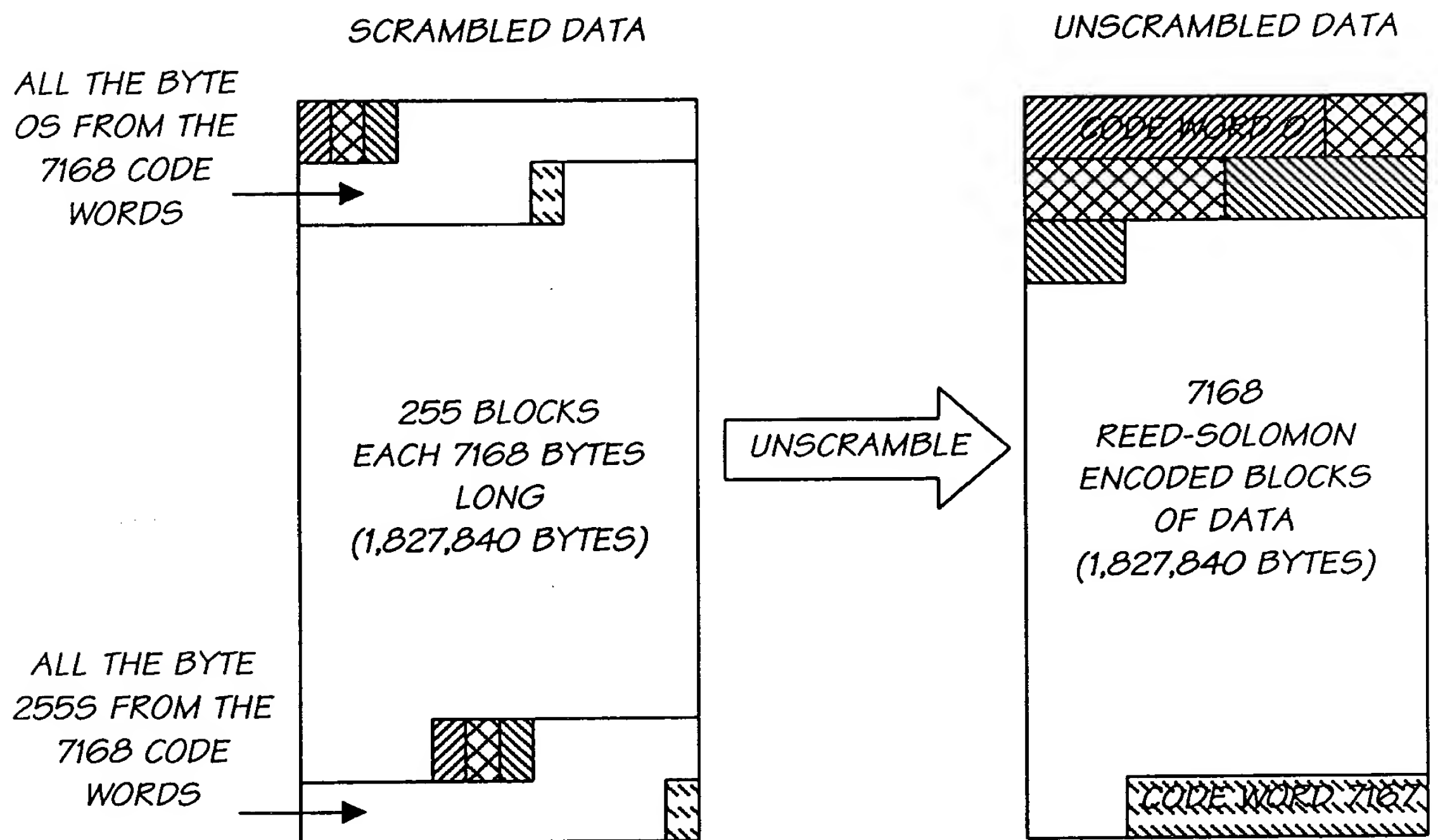


FIG. 80

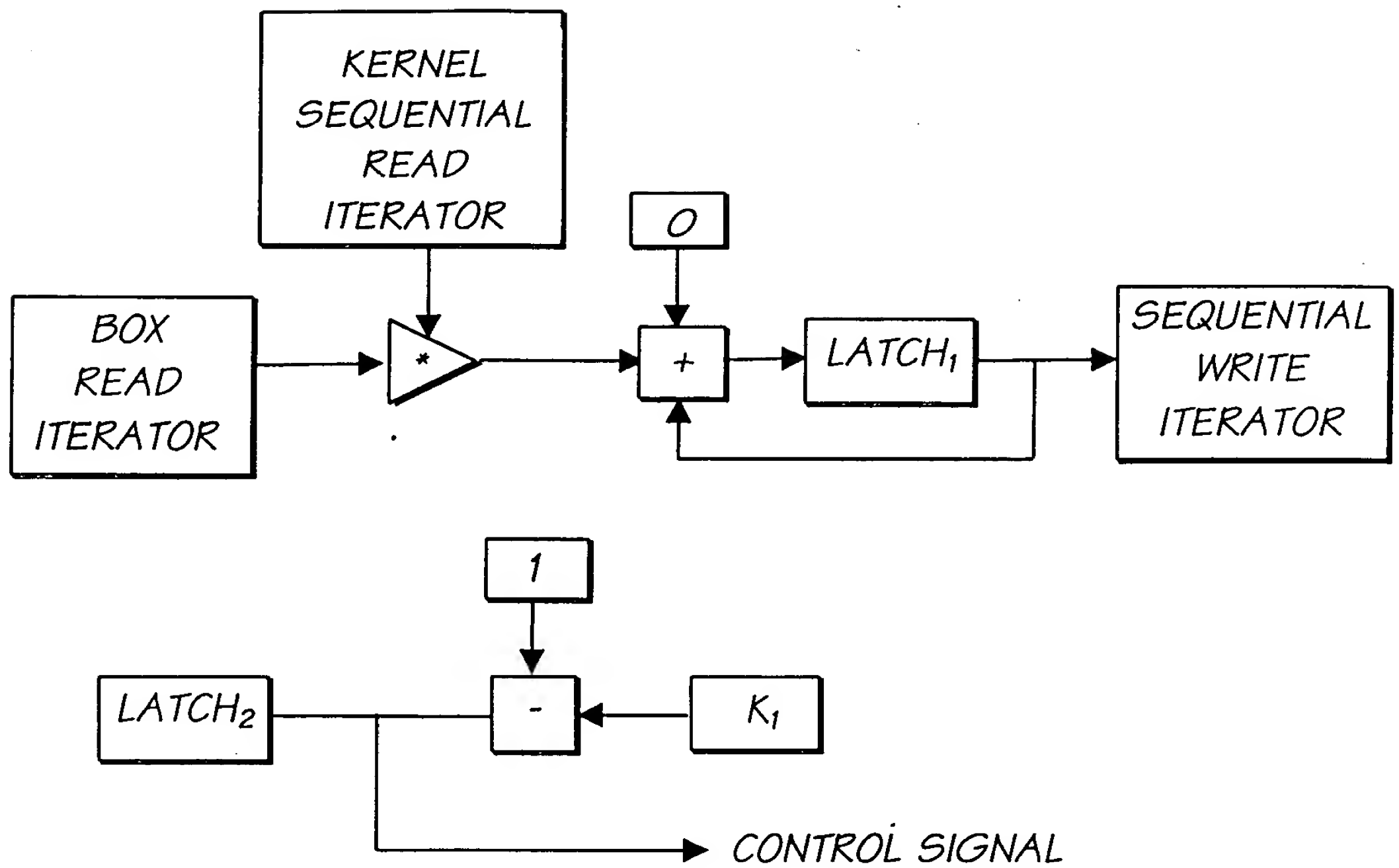


FIG. 81

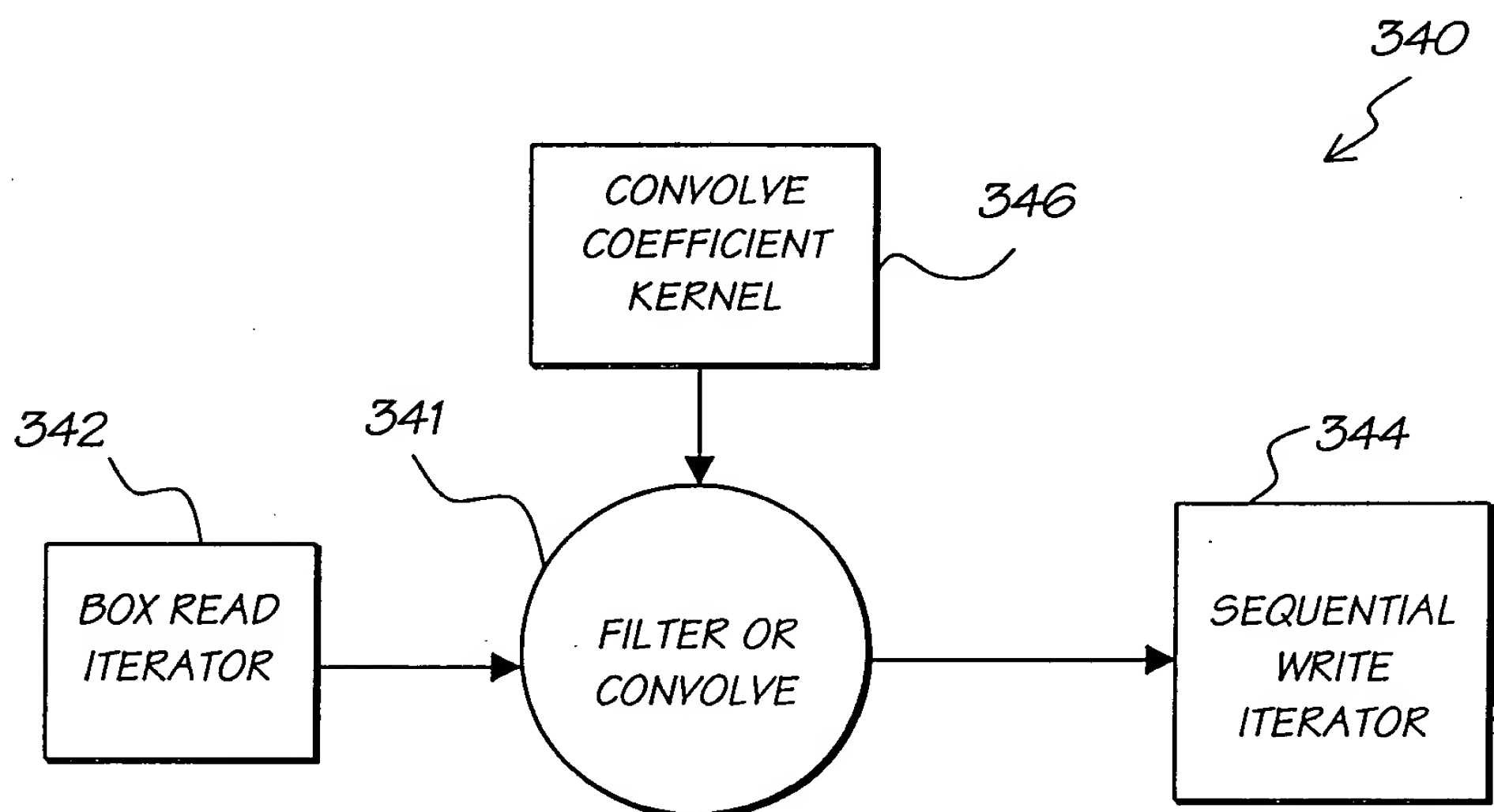


FIG. 82

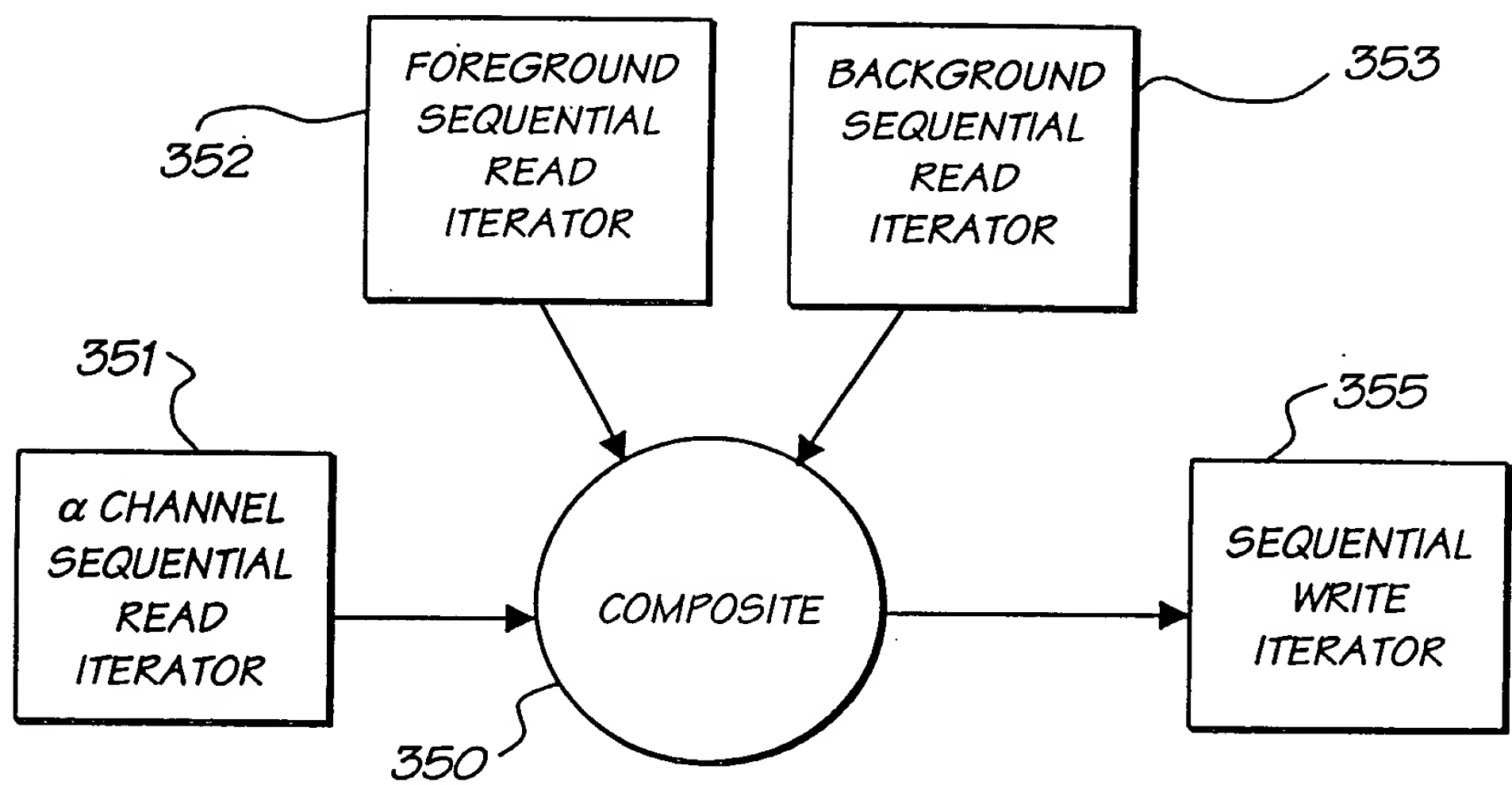


FIG. 83

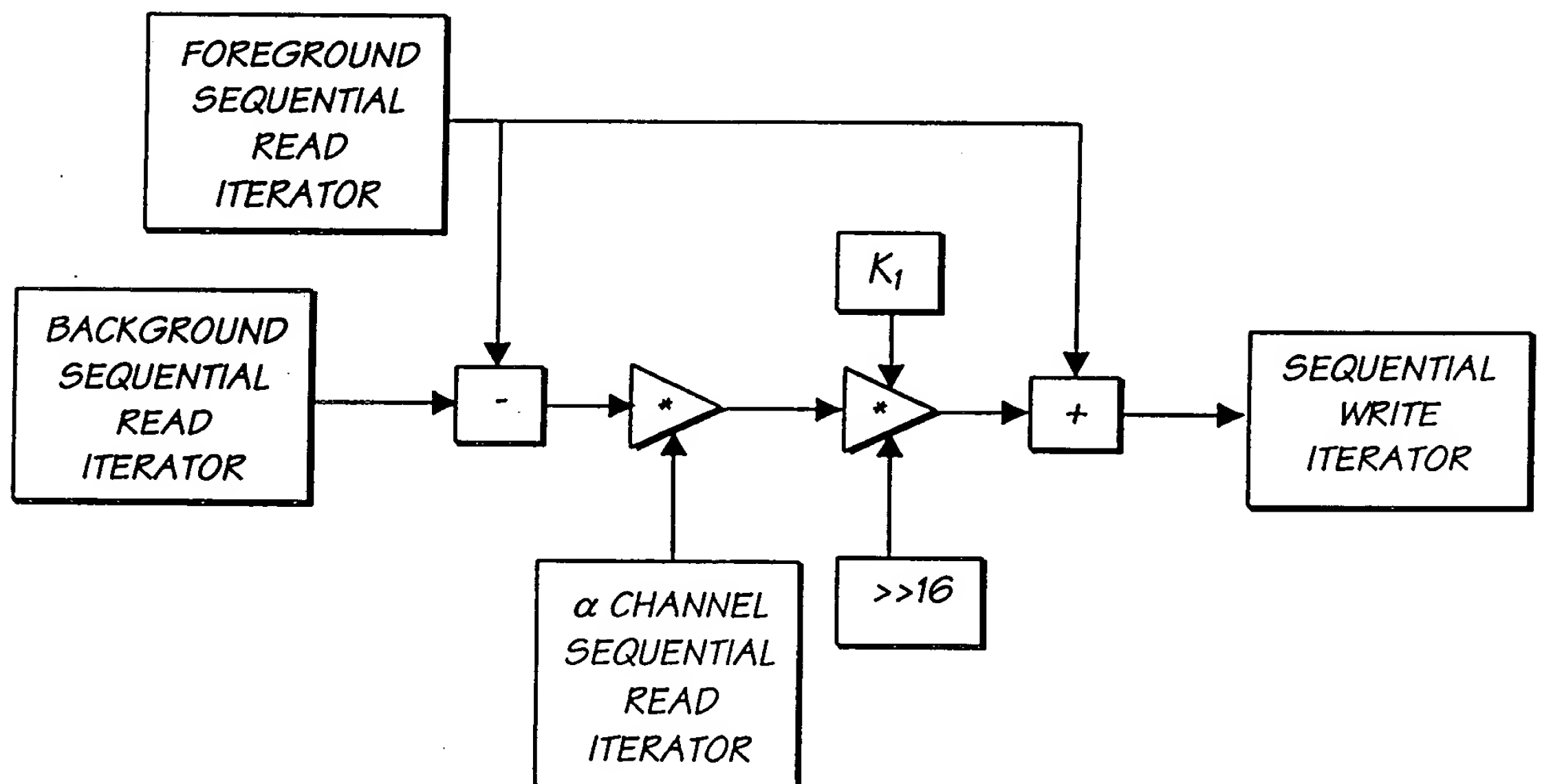


FIG. 84

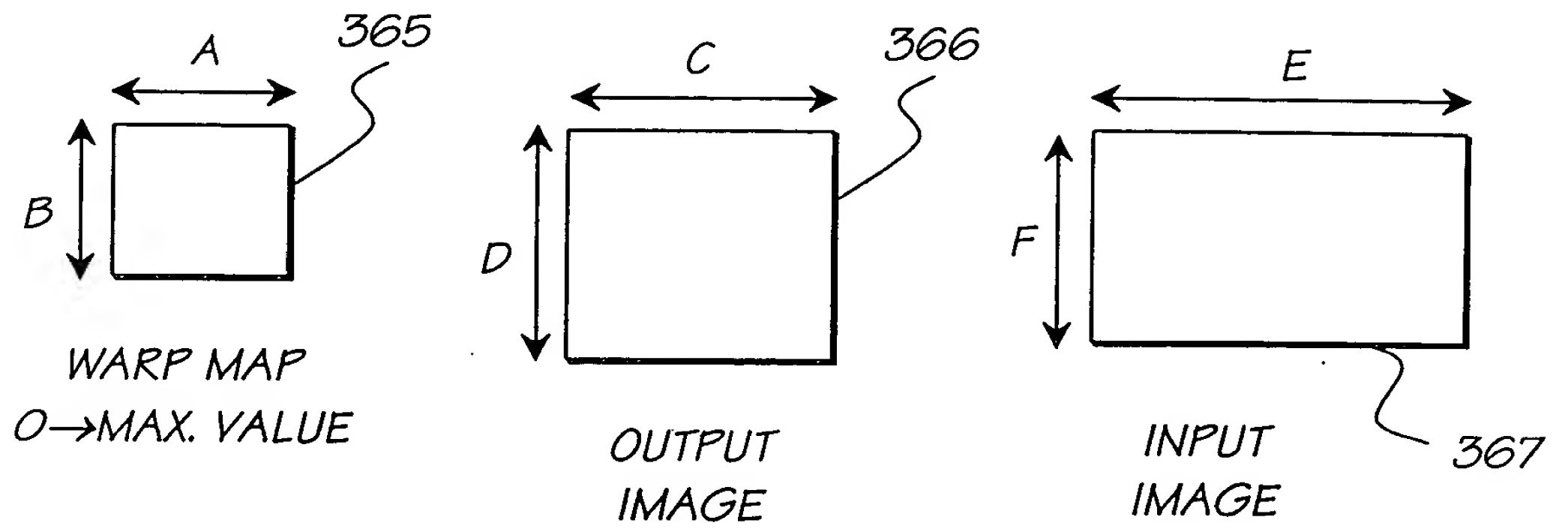


FIG. 85

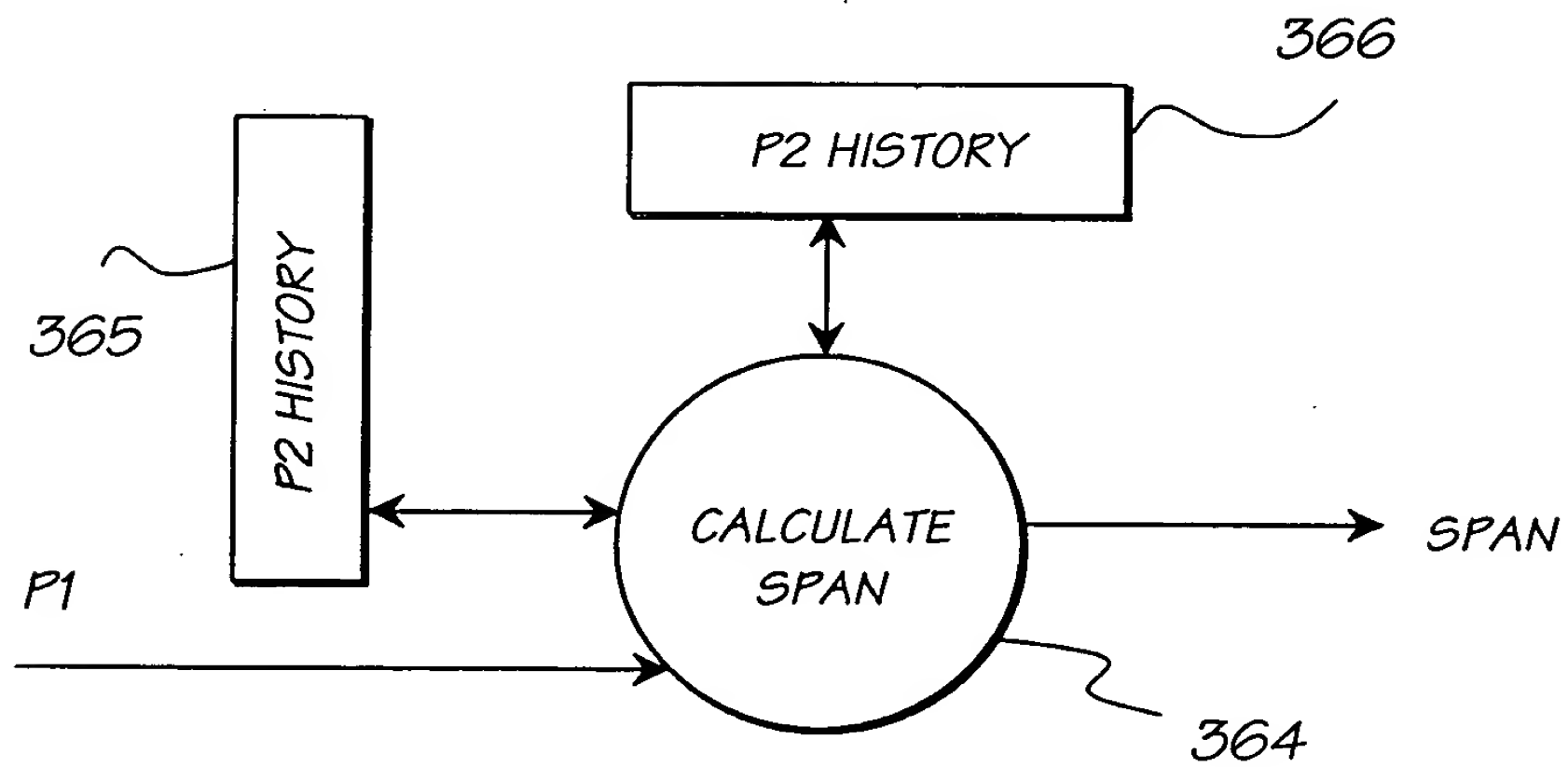


FIG. 86

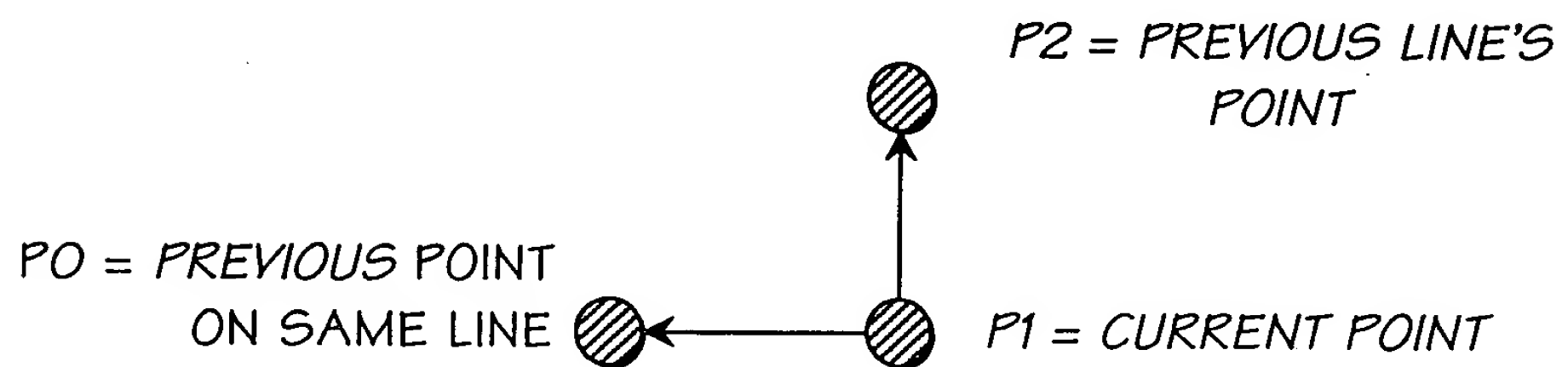


FIG. 88

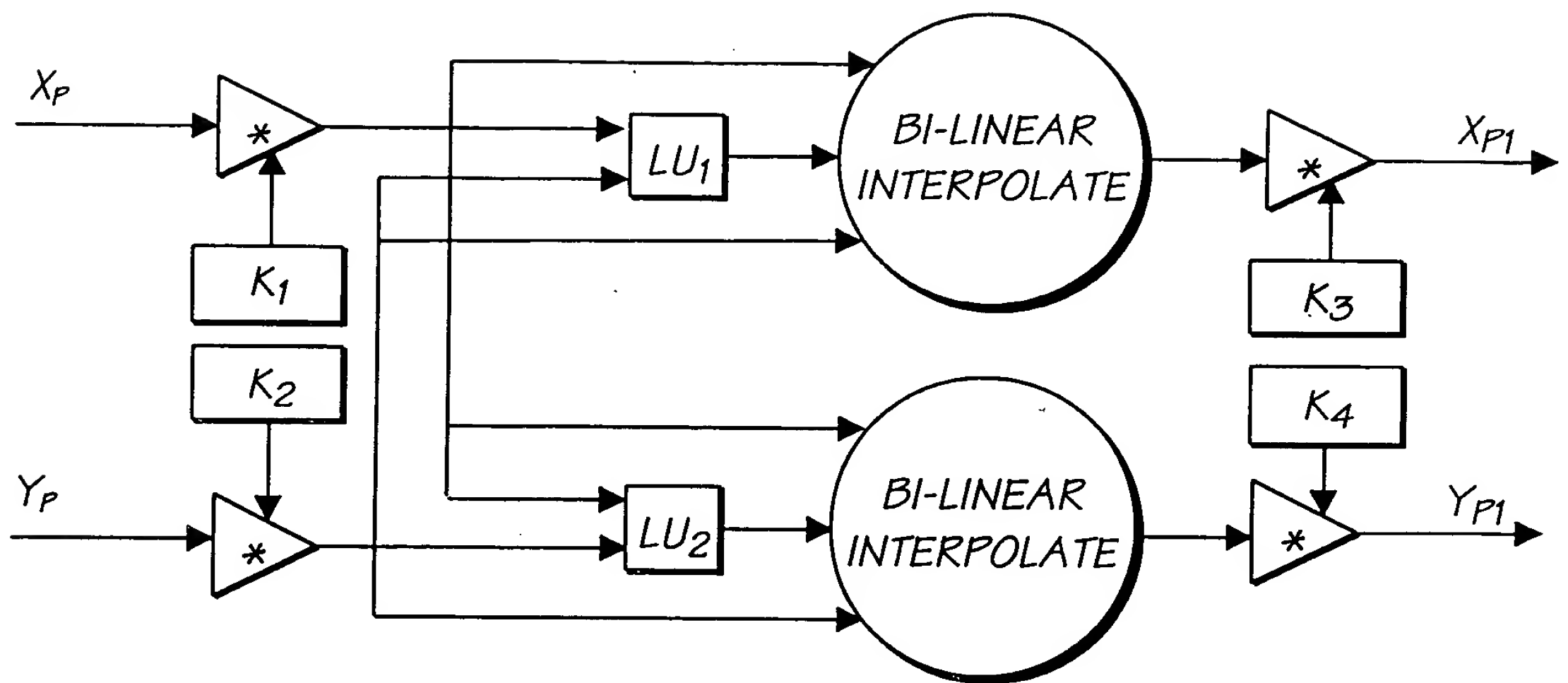


FIG. 87

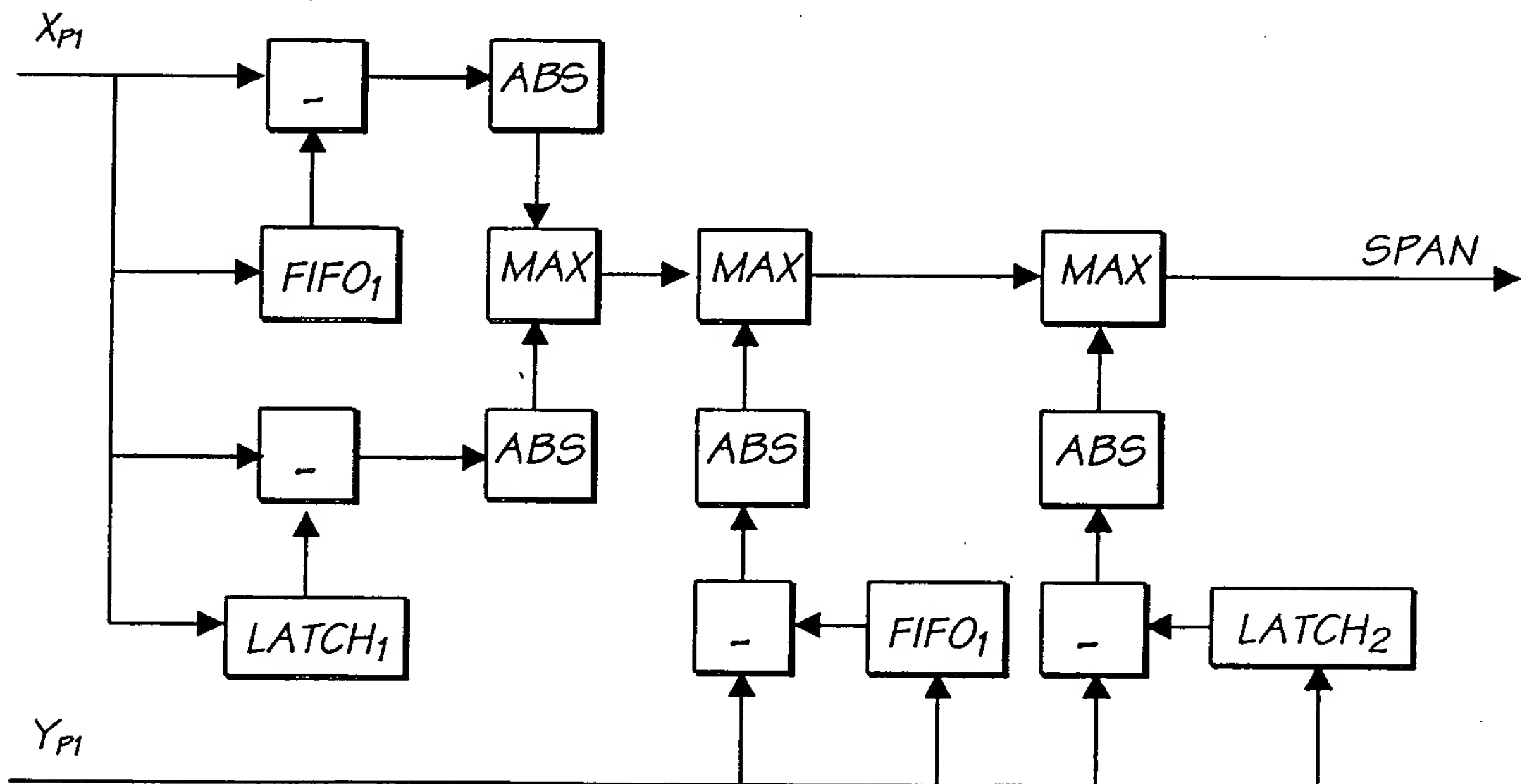


FIG. 89



POINT (x, y) ON LEVEL B  
OF PYRAMID

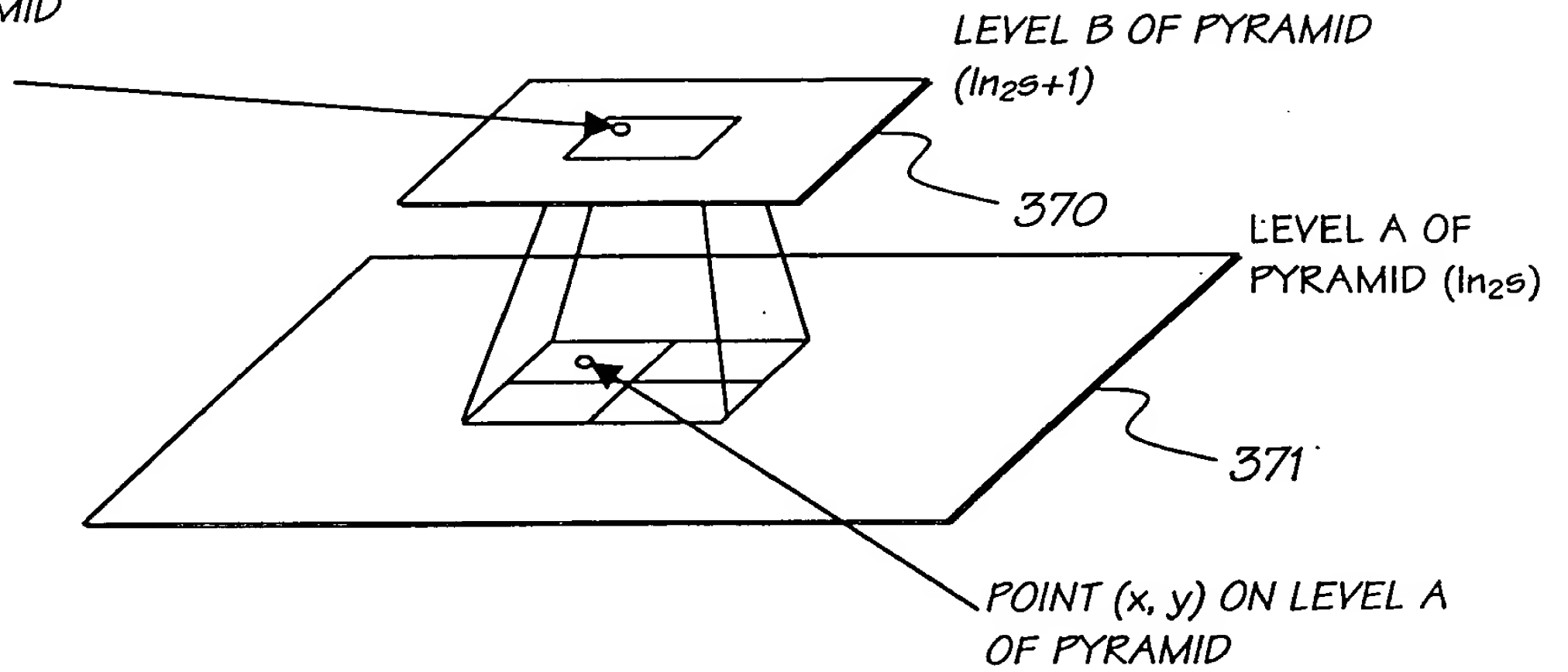


FIG. 90

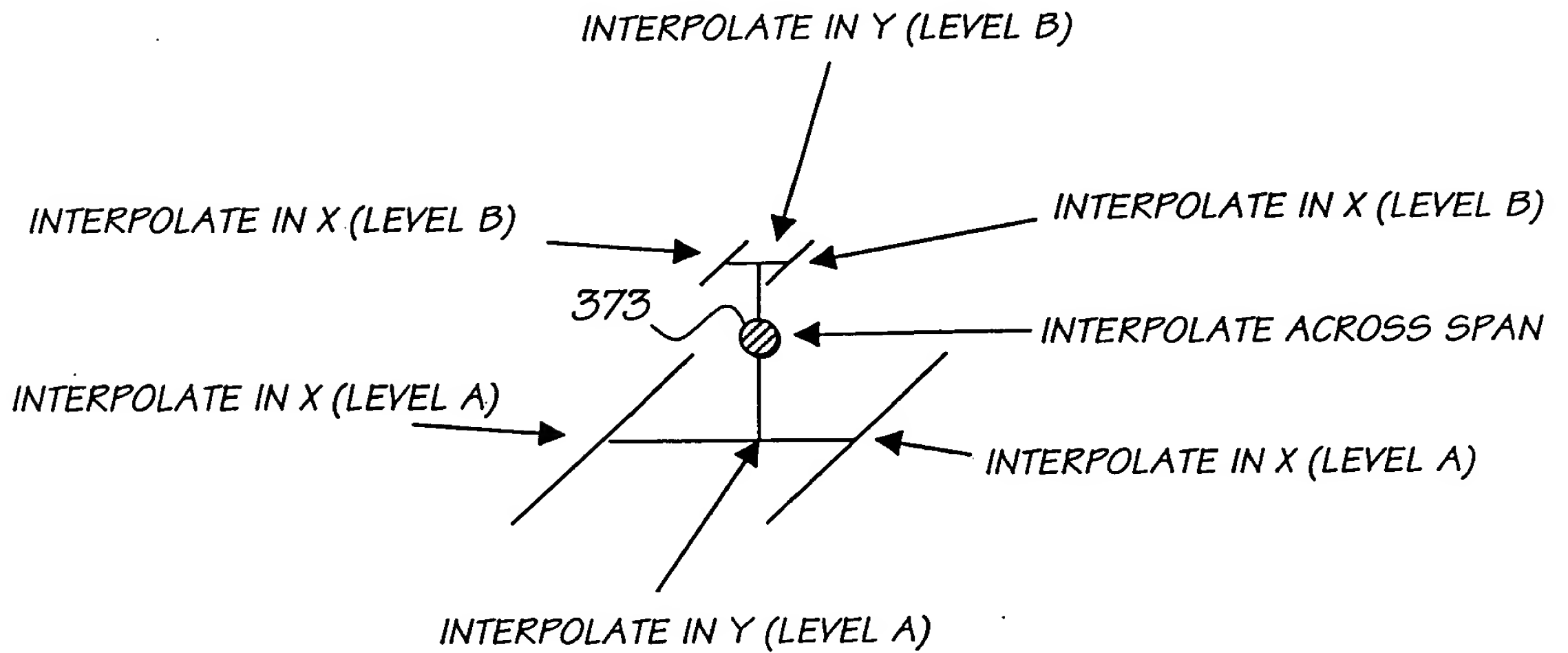


FIG. 91

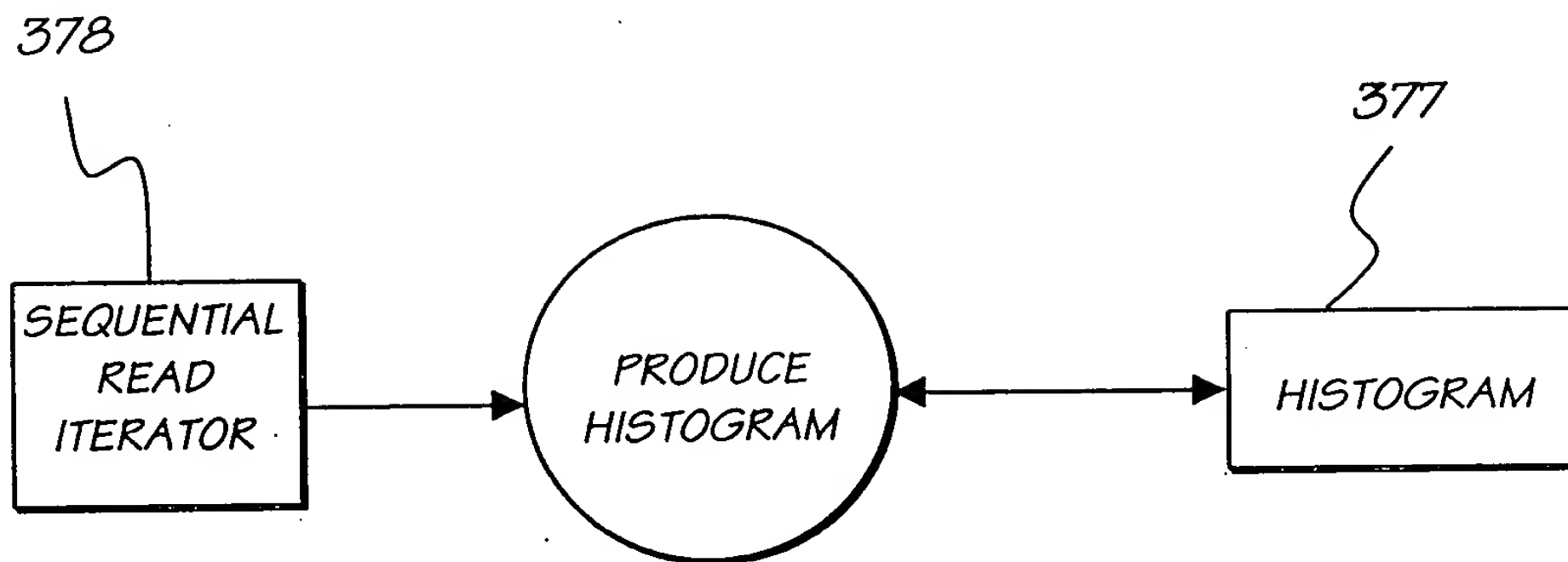


FIG. 92

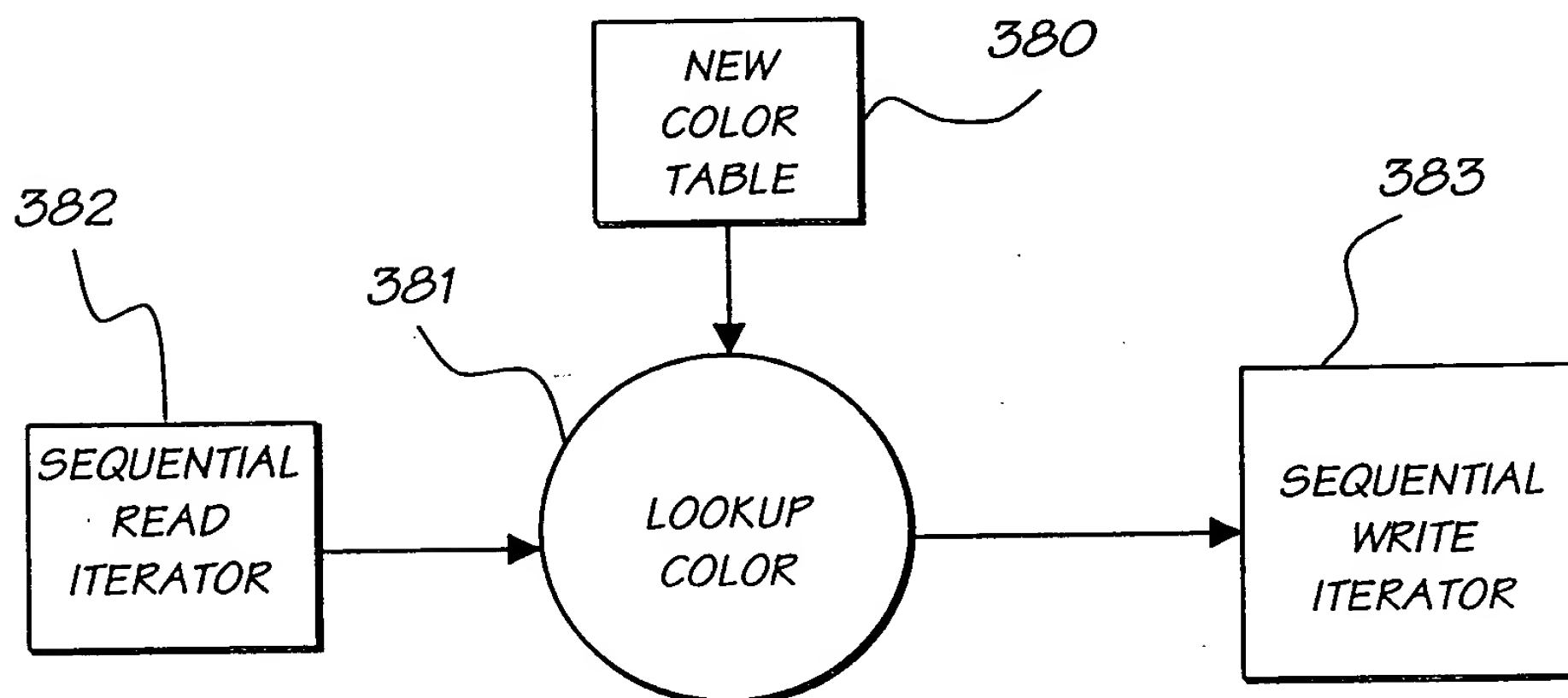


FIG. 93

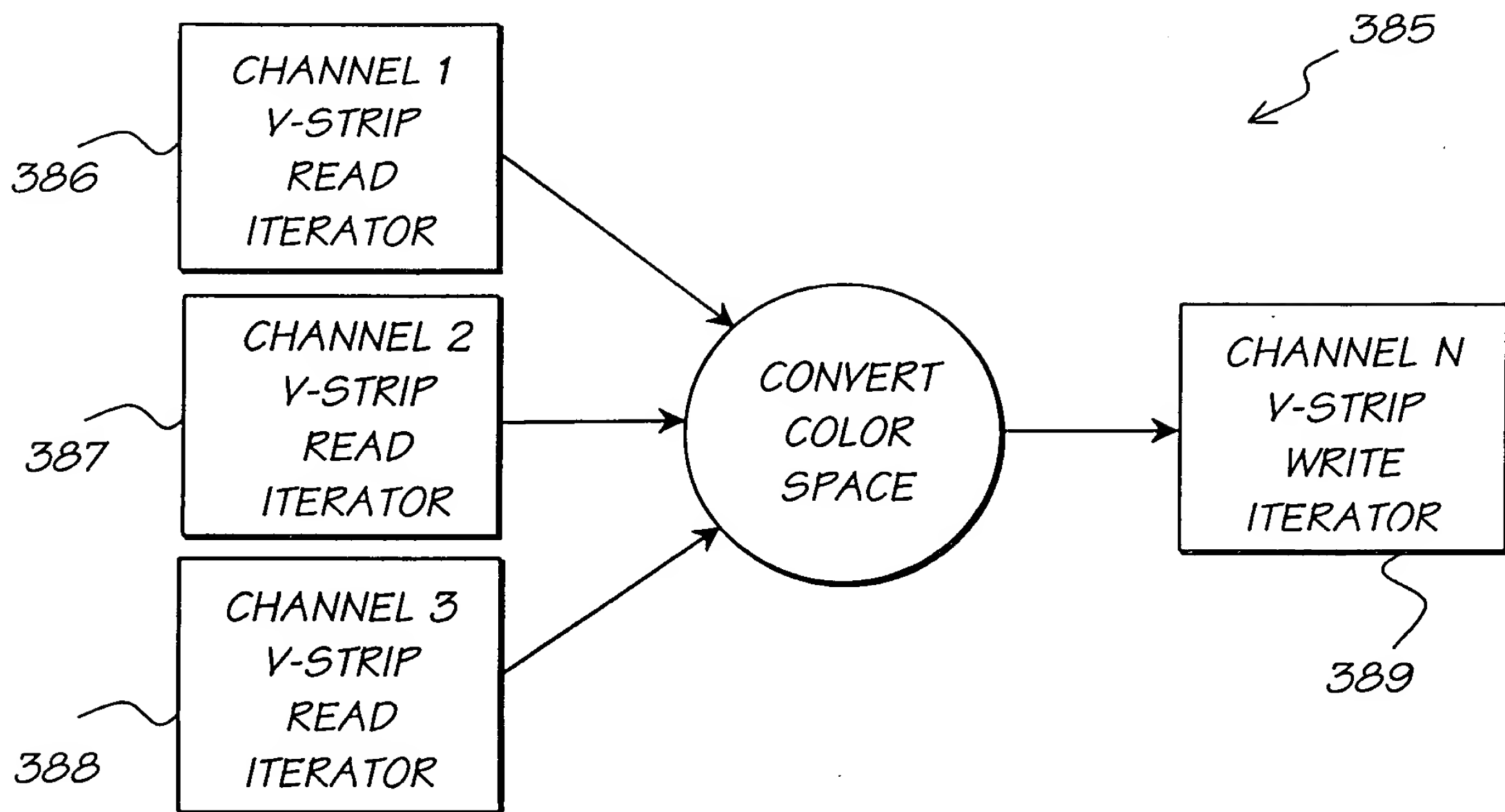


FIG. 94

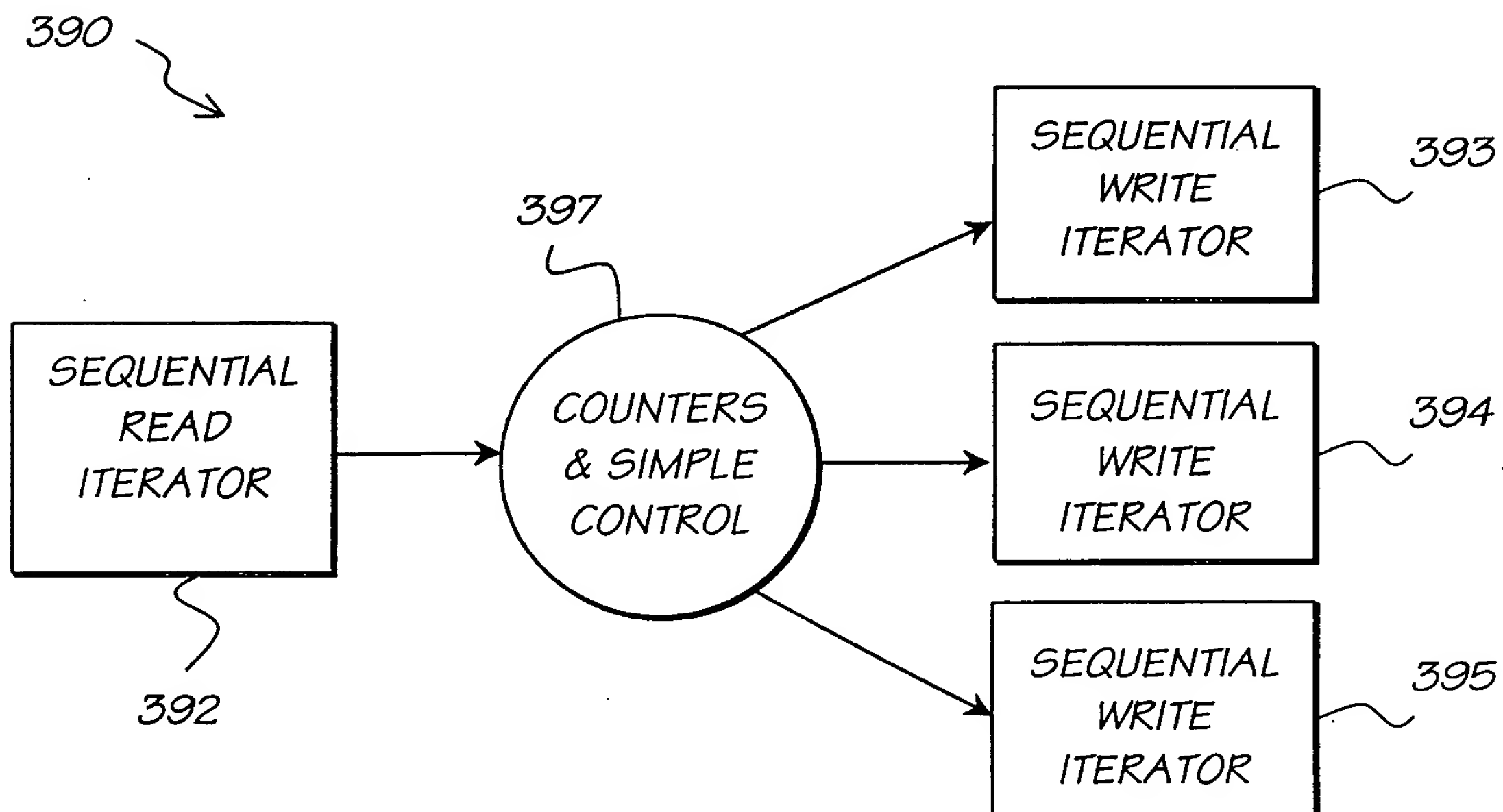


FIG. 101

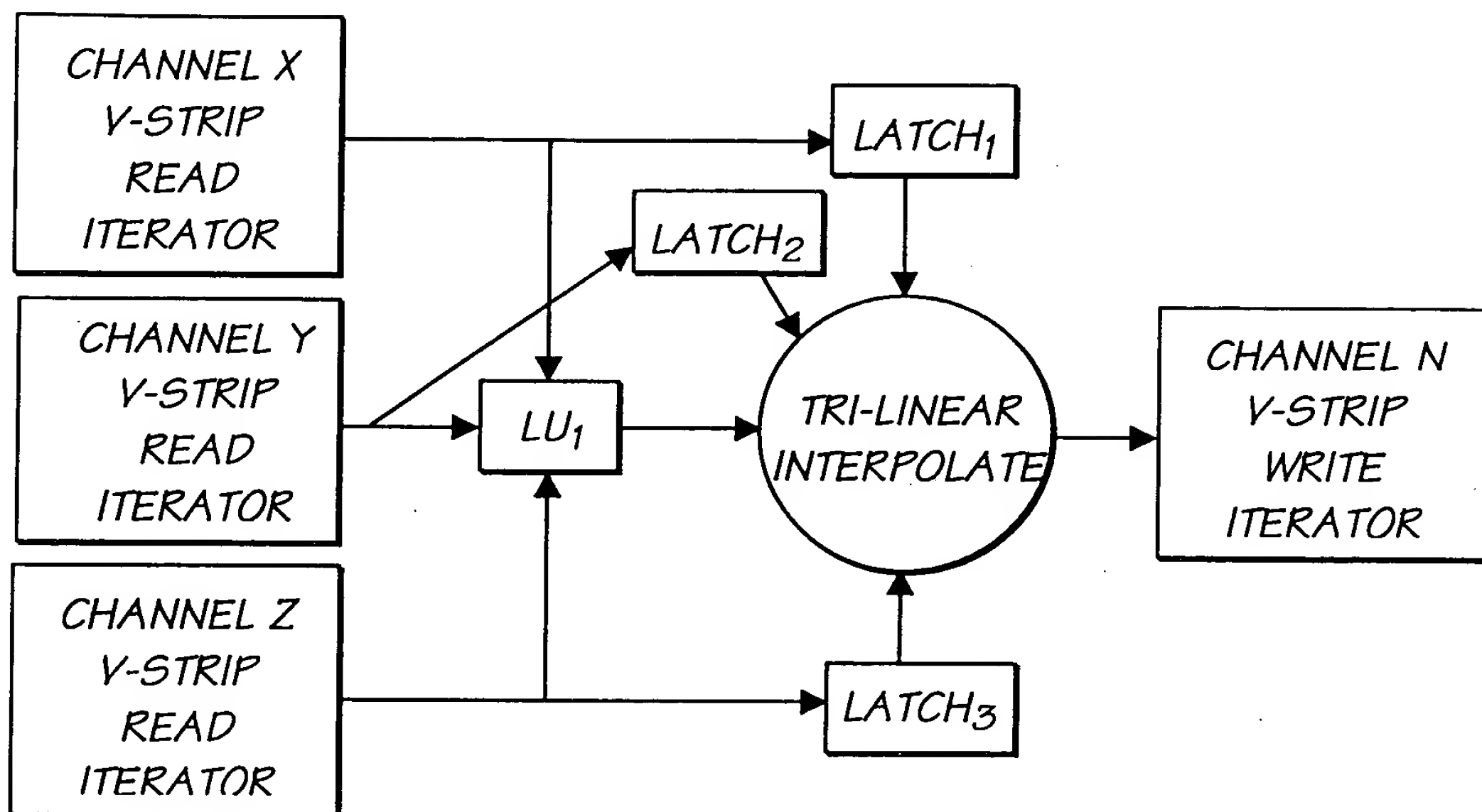


FIG. 95

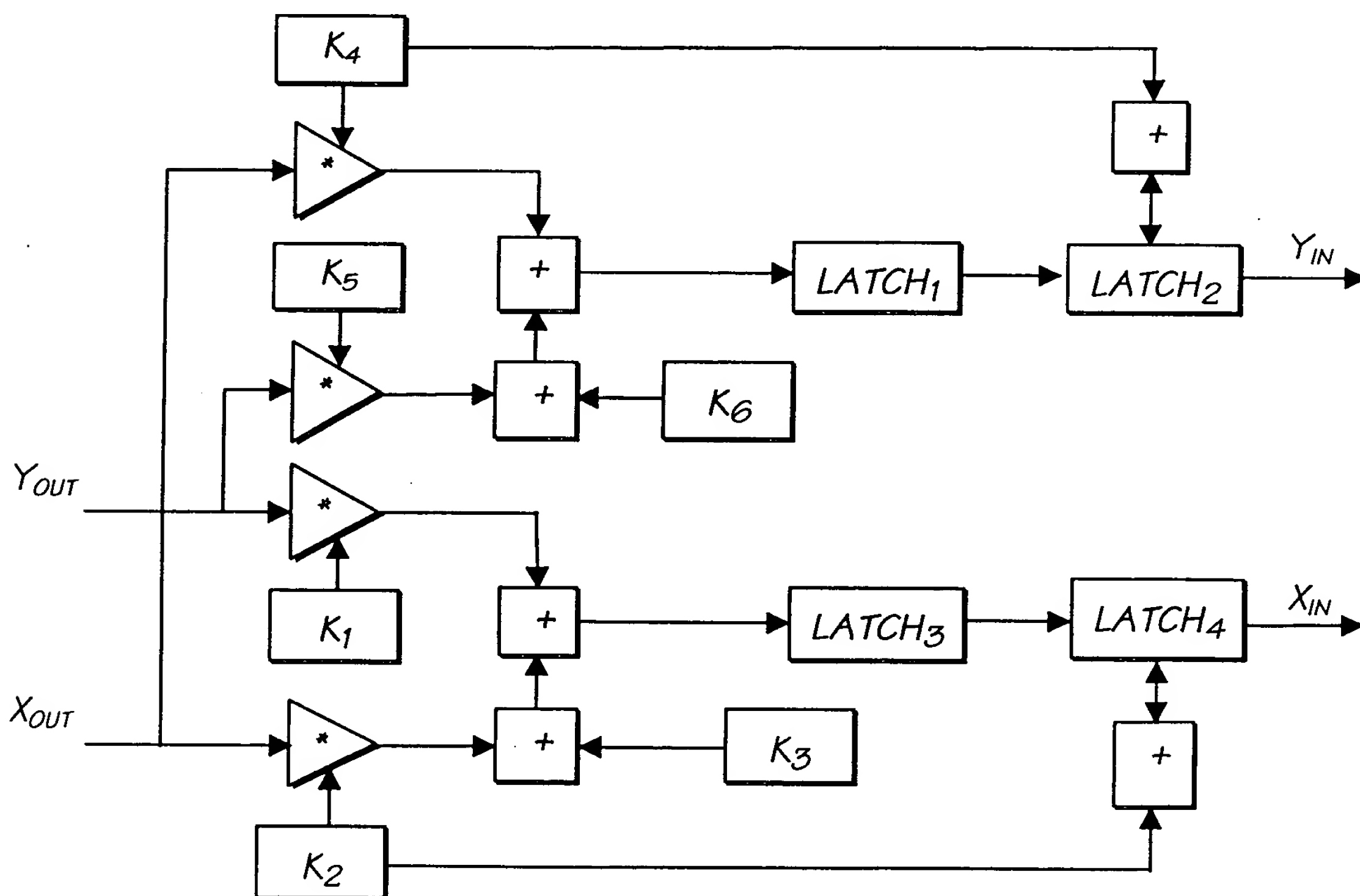


FIG. 96

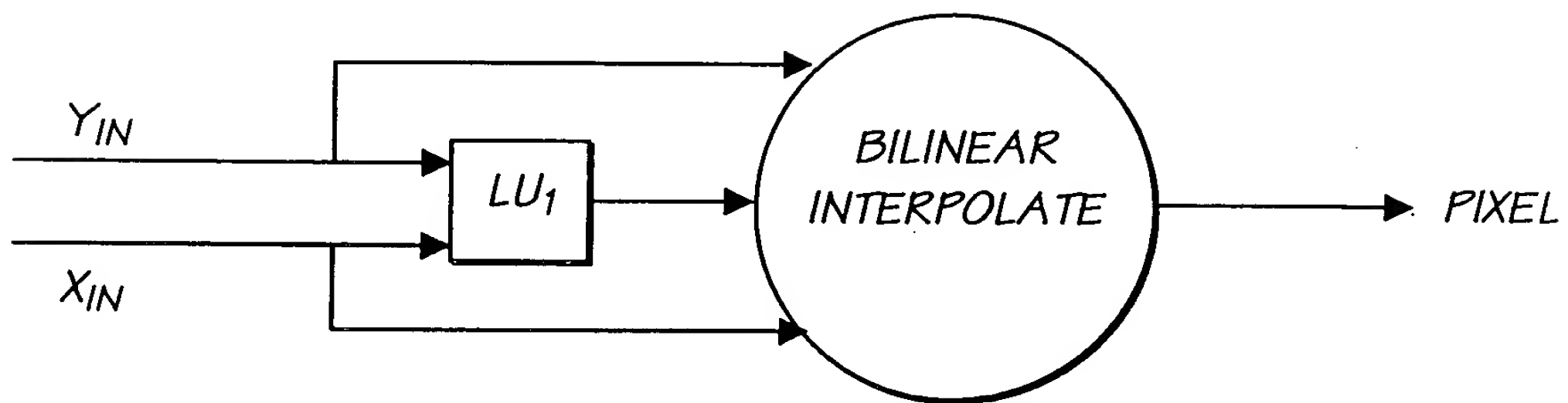


FIG. 97

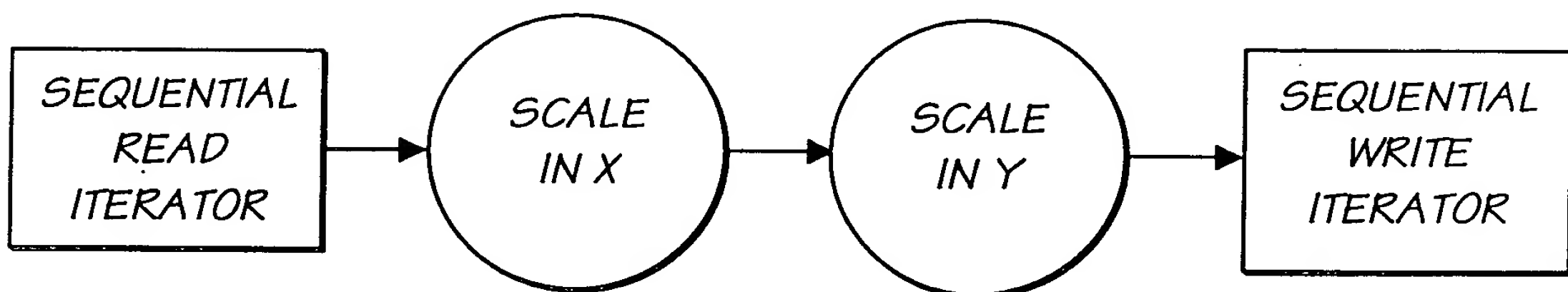


FIG. 98

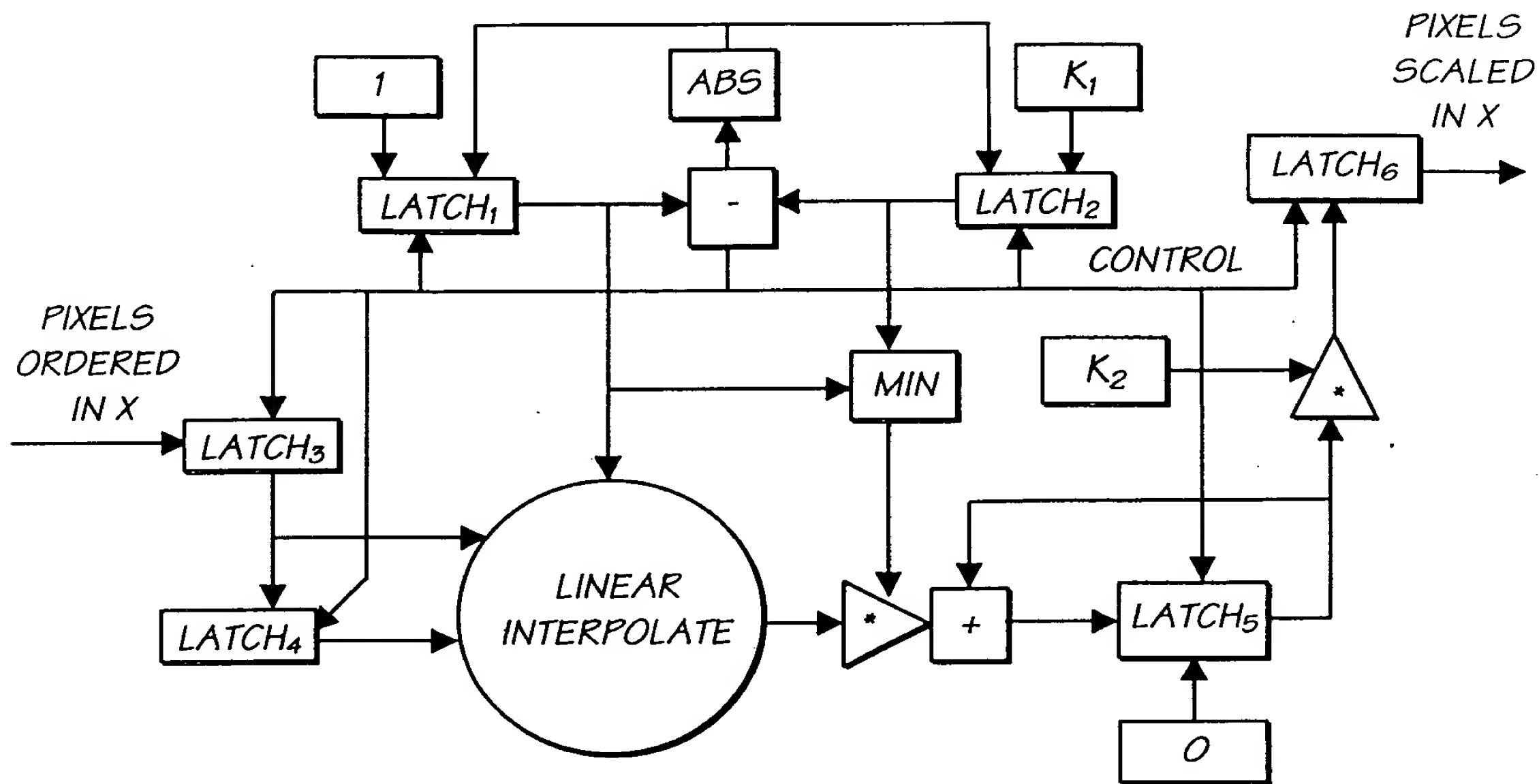


FIG. 99

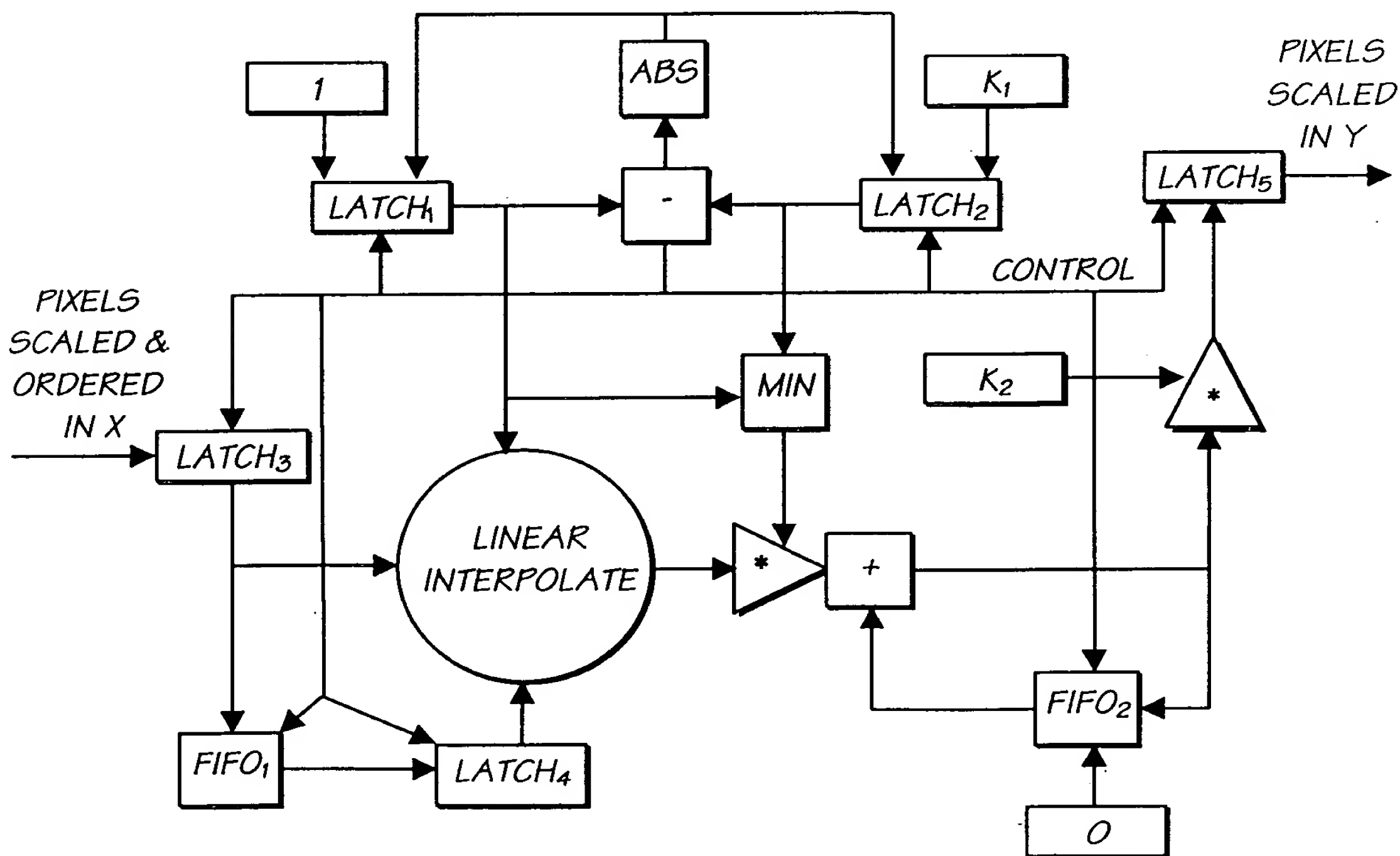
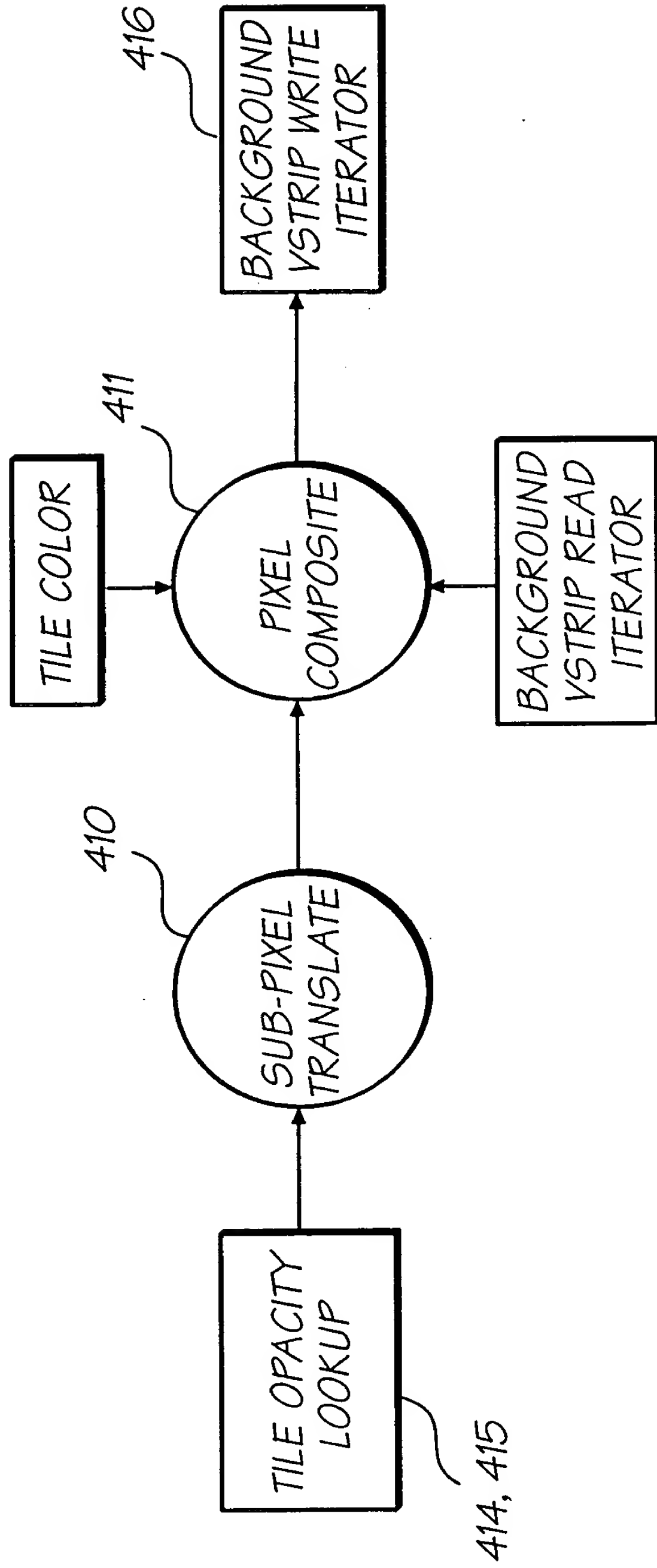
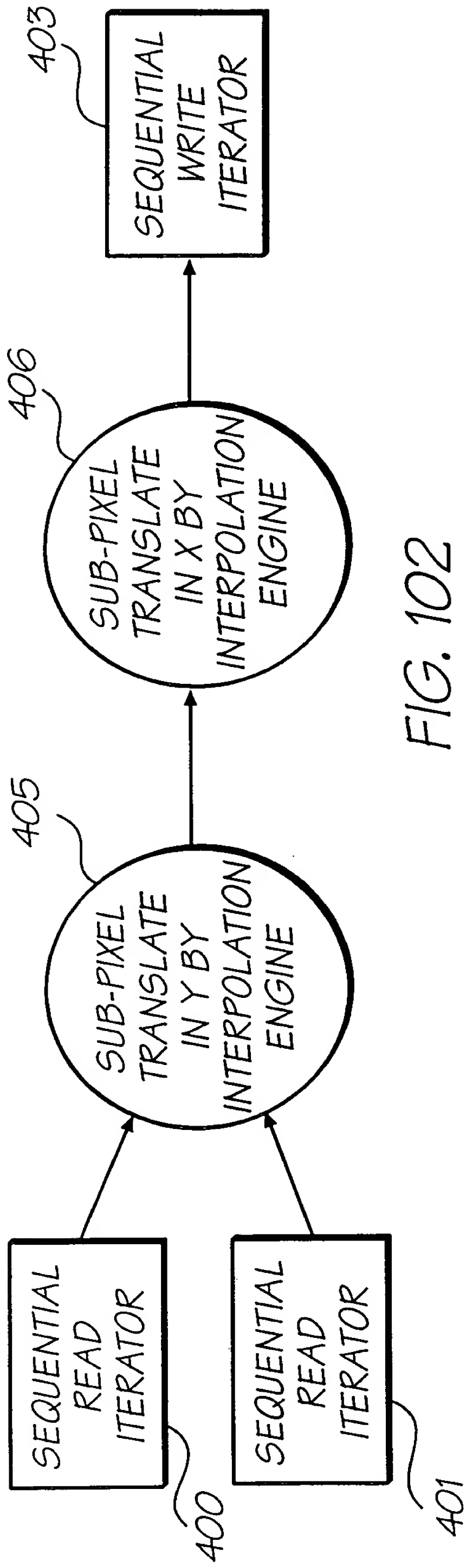


FIG. 100



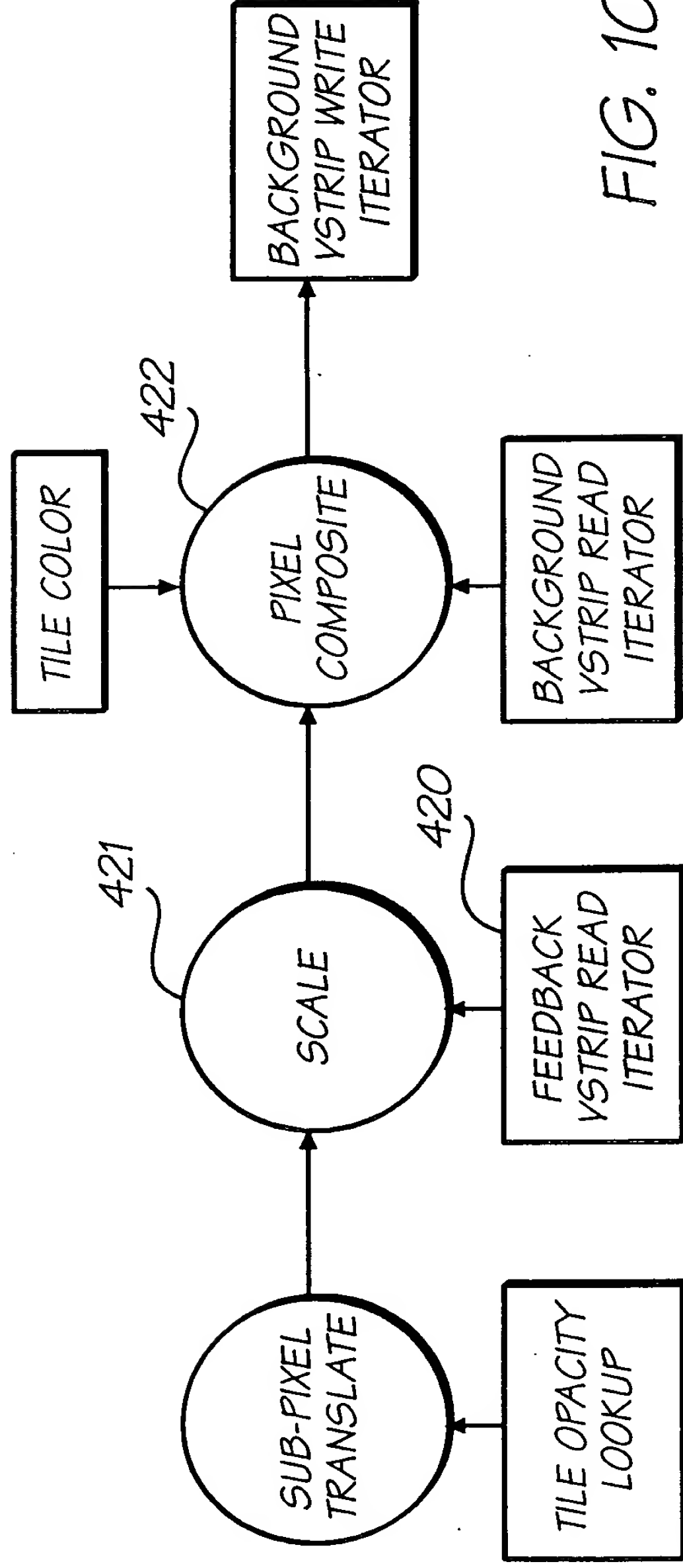


FIG. 104

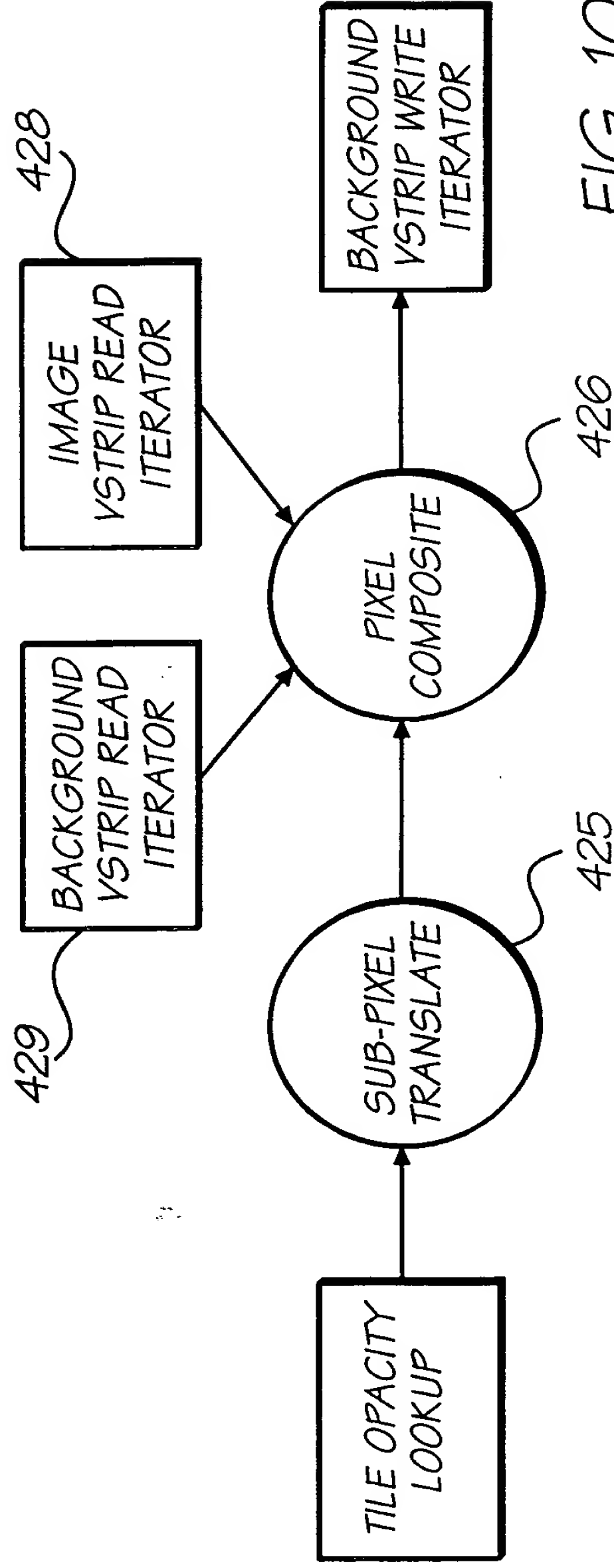


FIG. 105



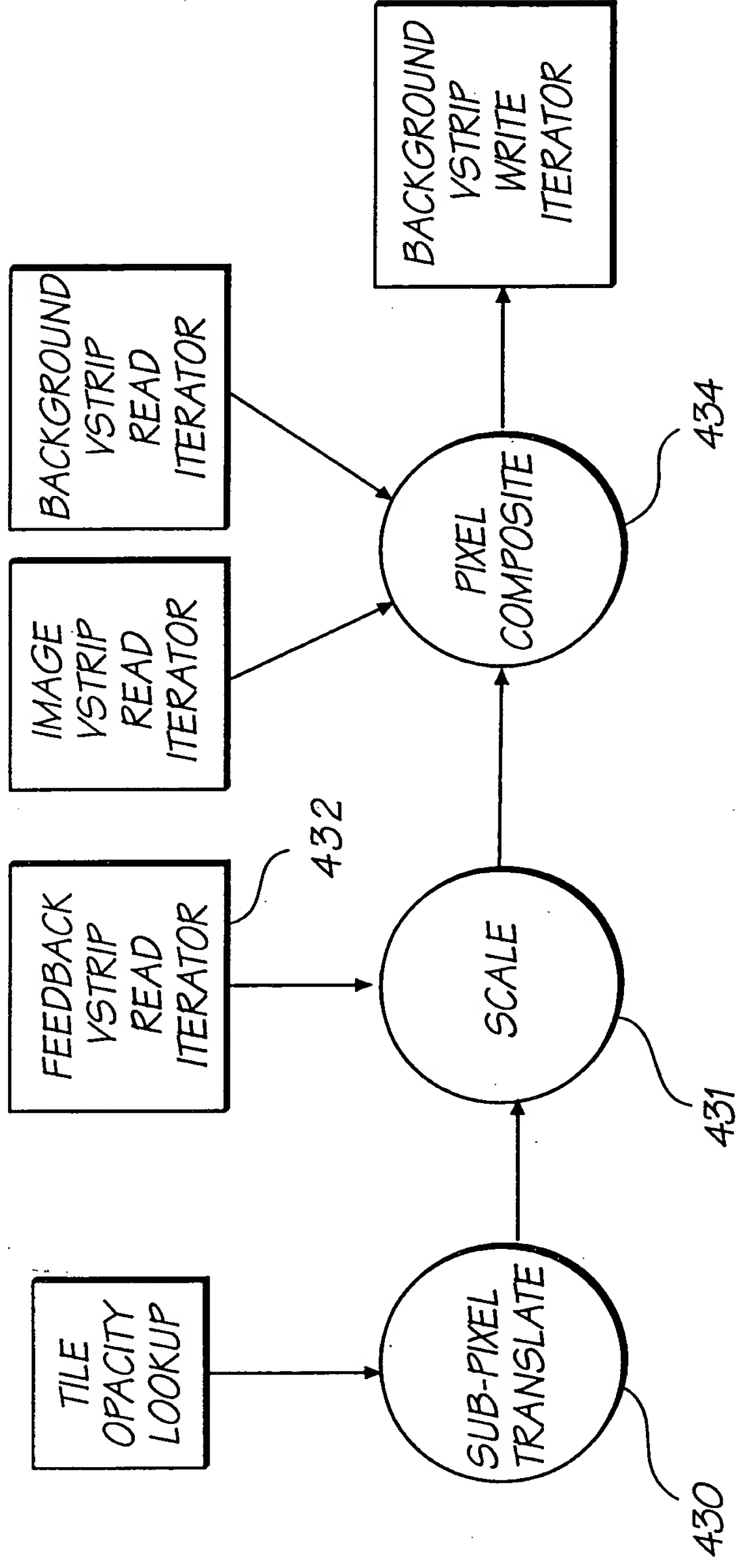


FIG. 106

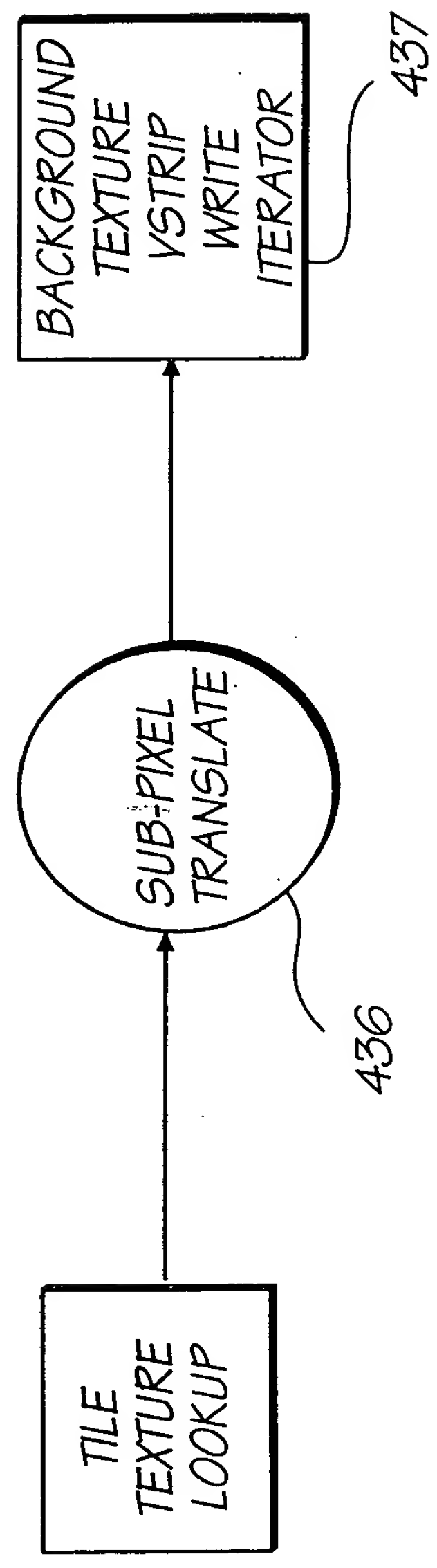


FIG. 107

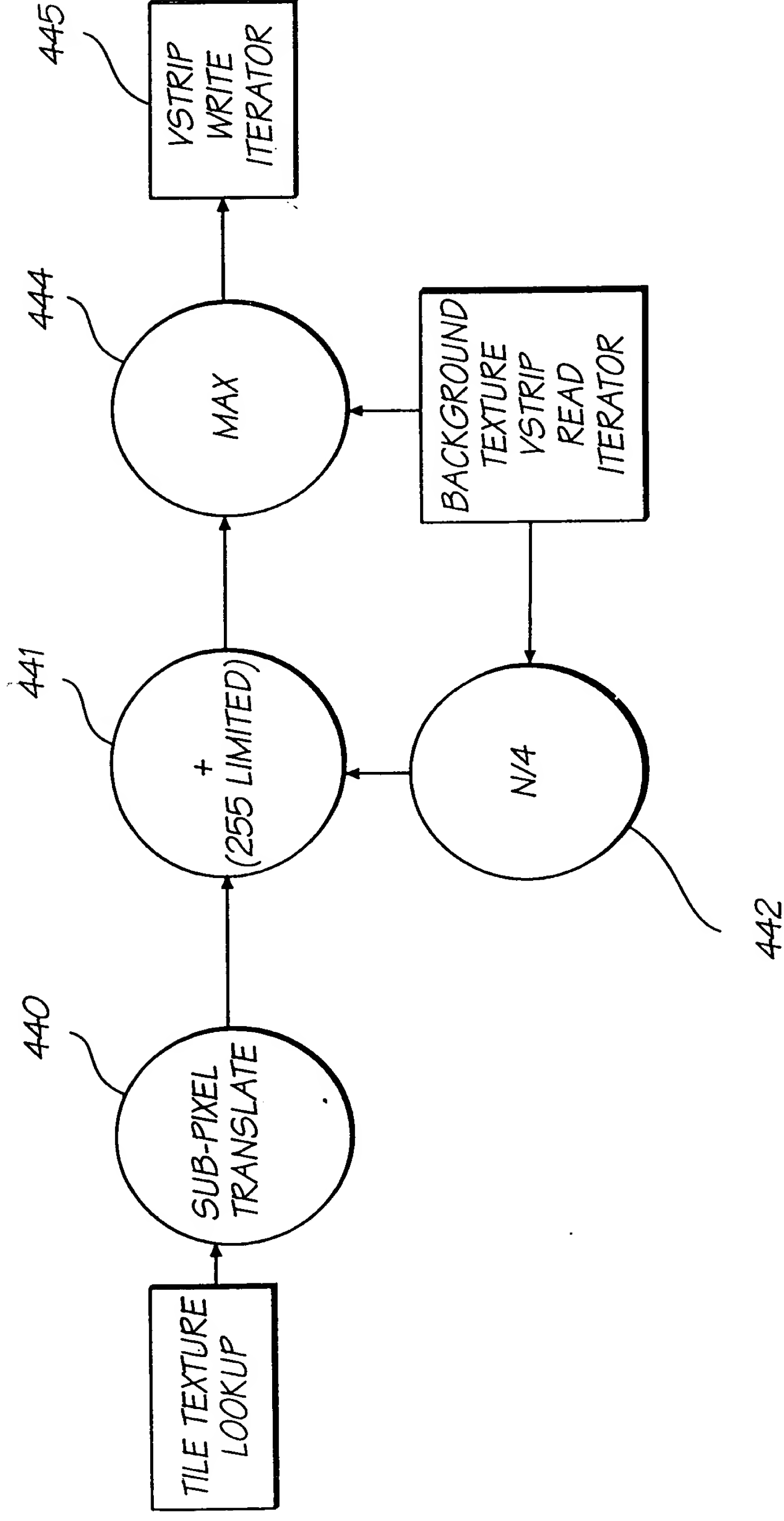


FIG. 108

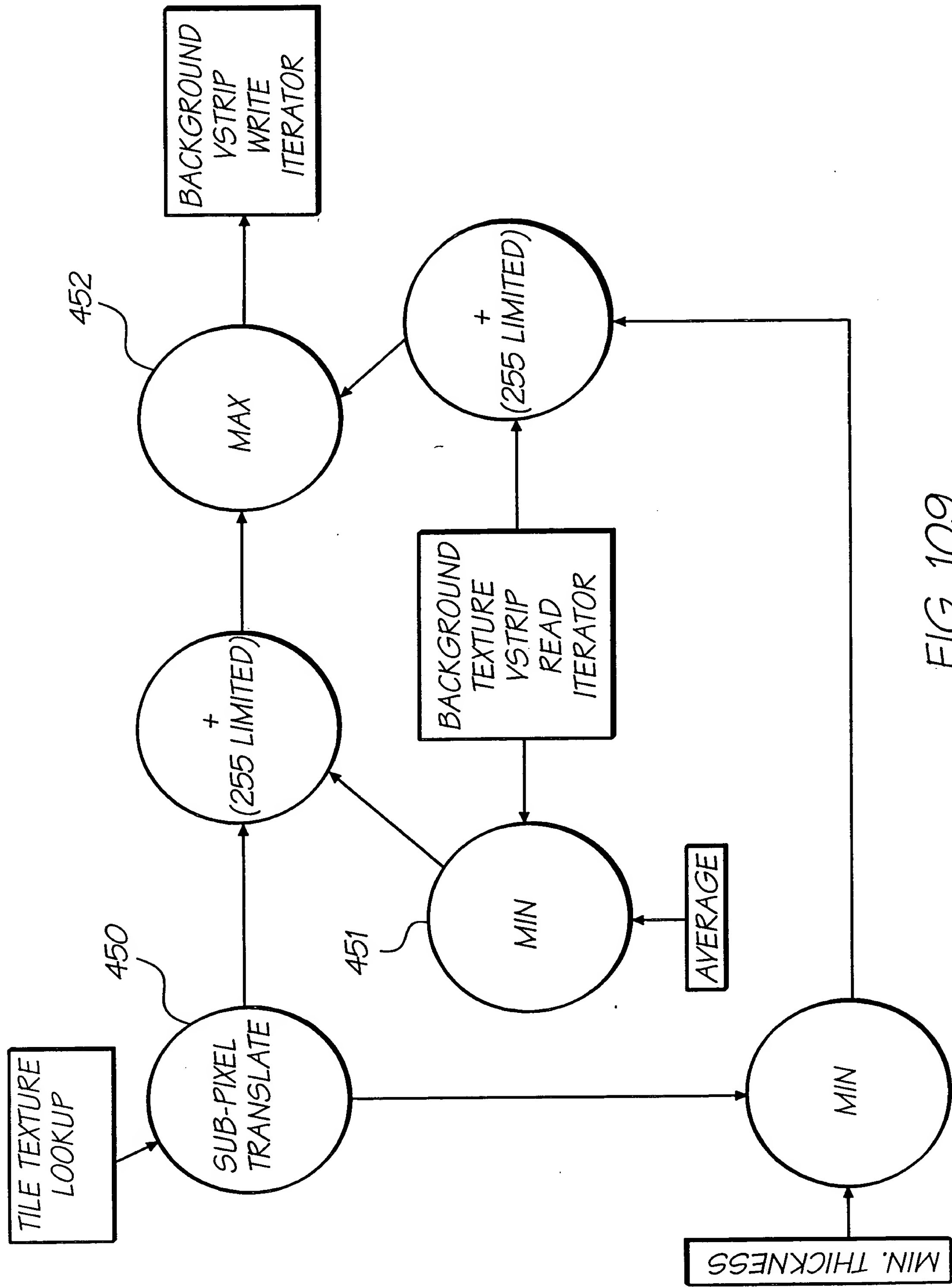


FIG. 109

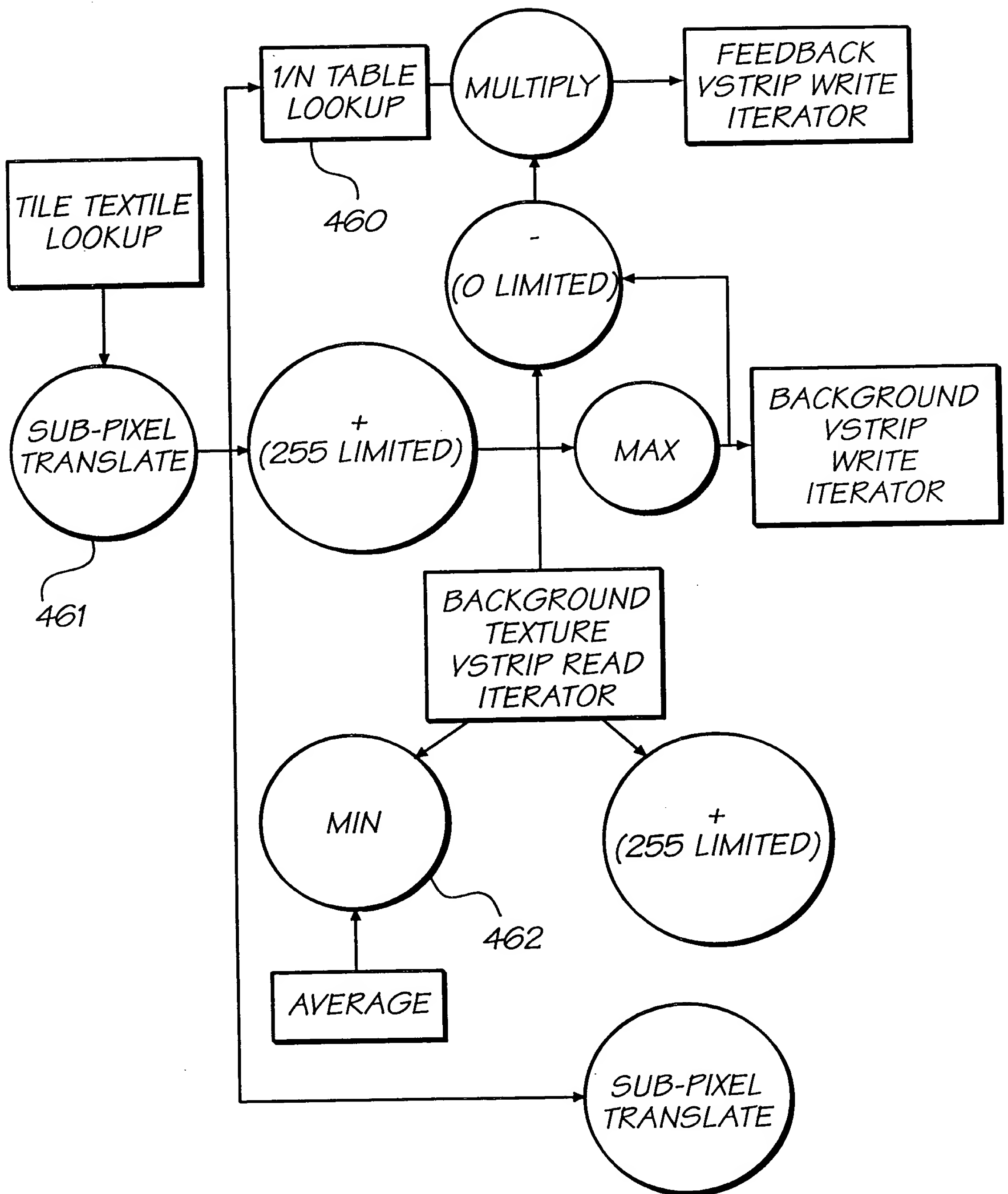


FIG. 110

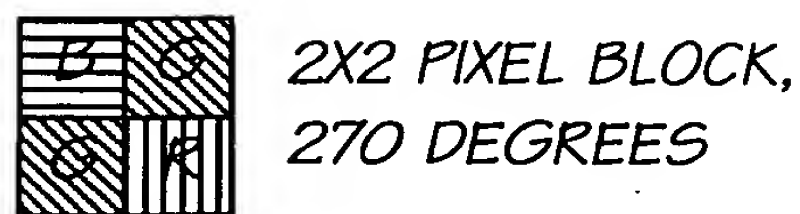
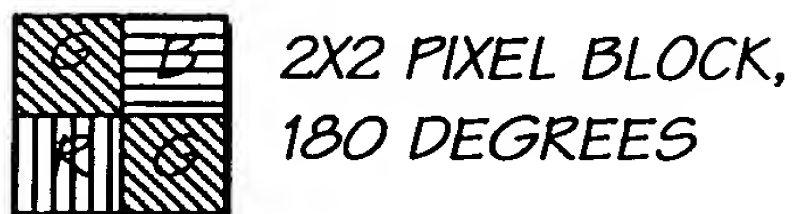
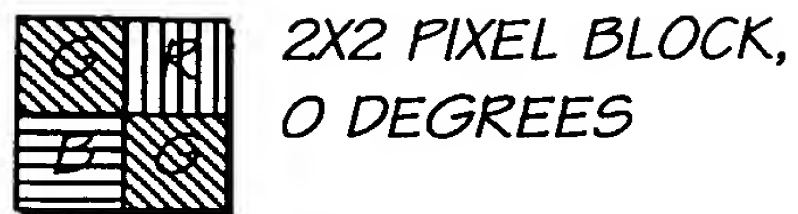


FIG. 111

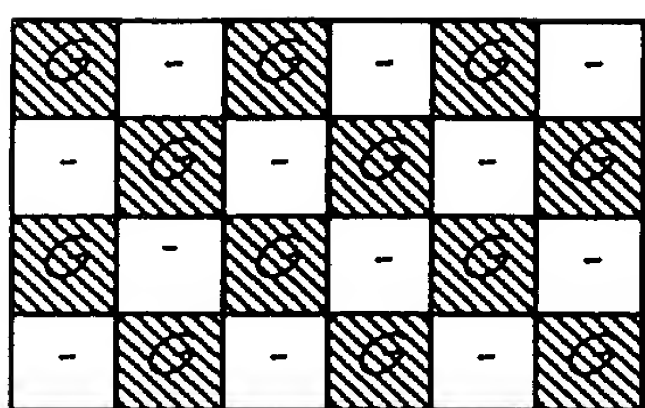


FIG. 112

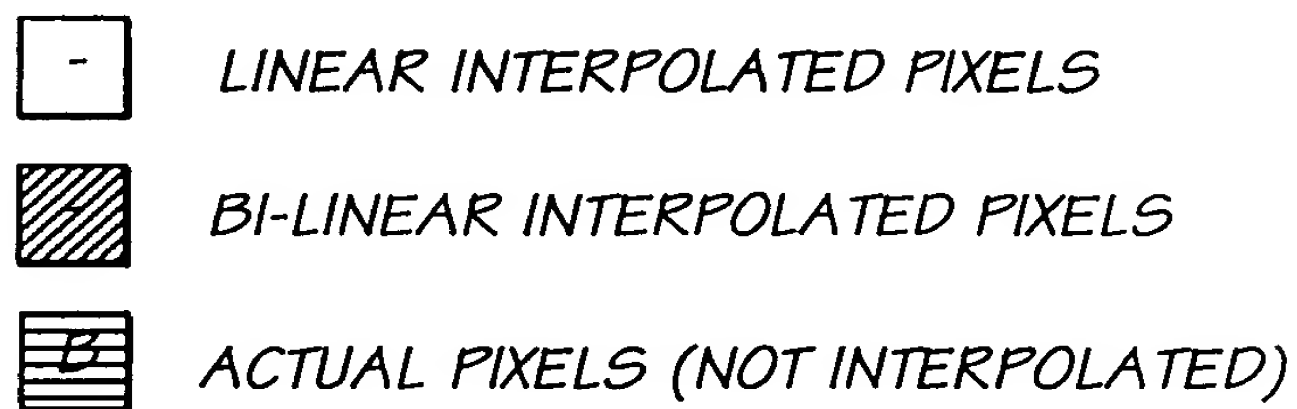
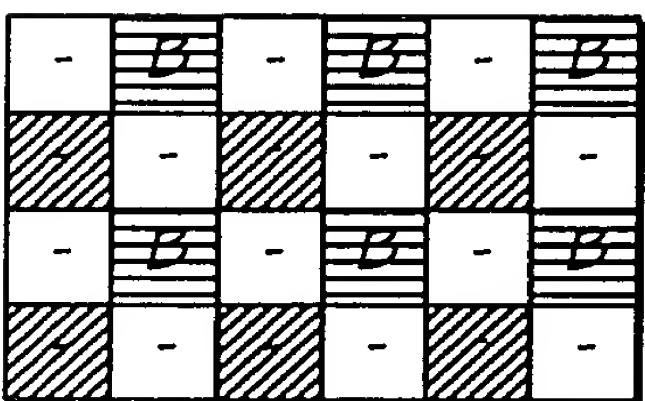


FIG. 113

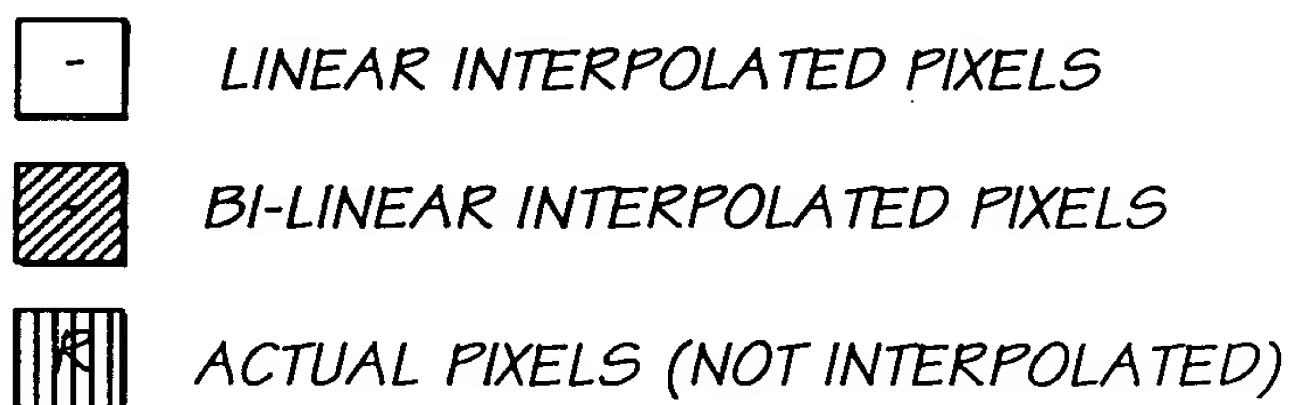
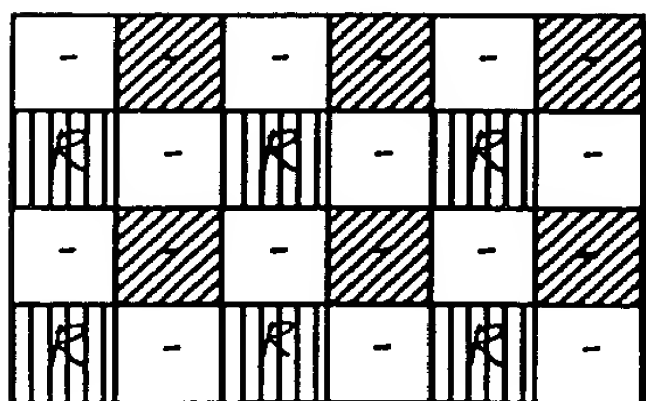


FIG. 114

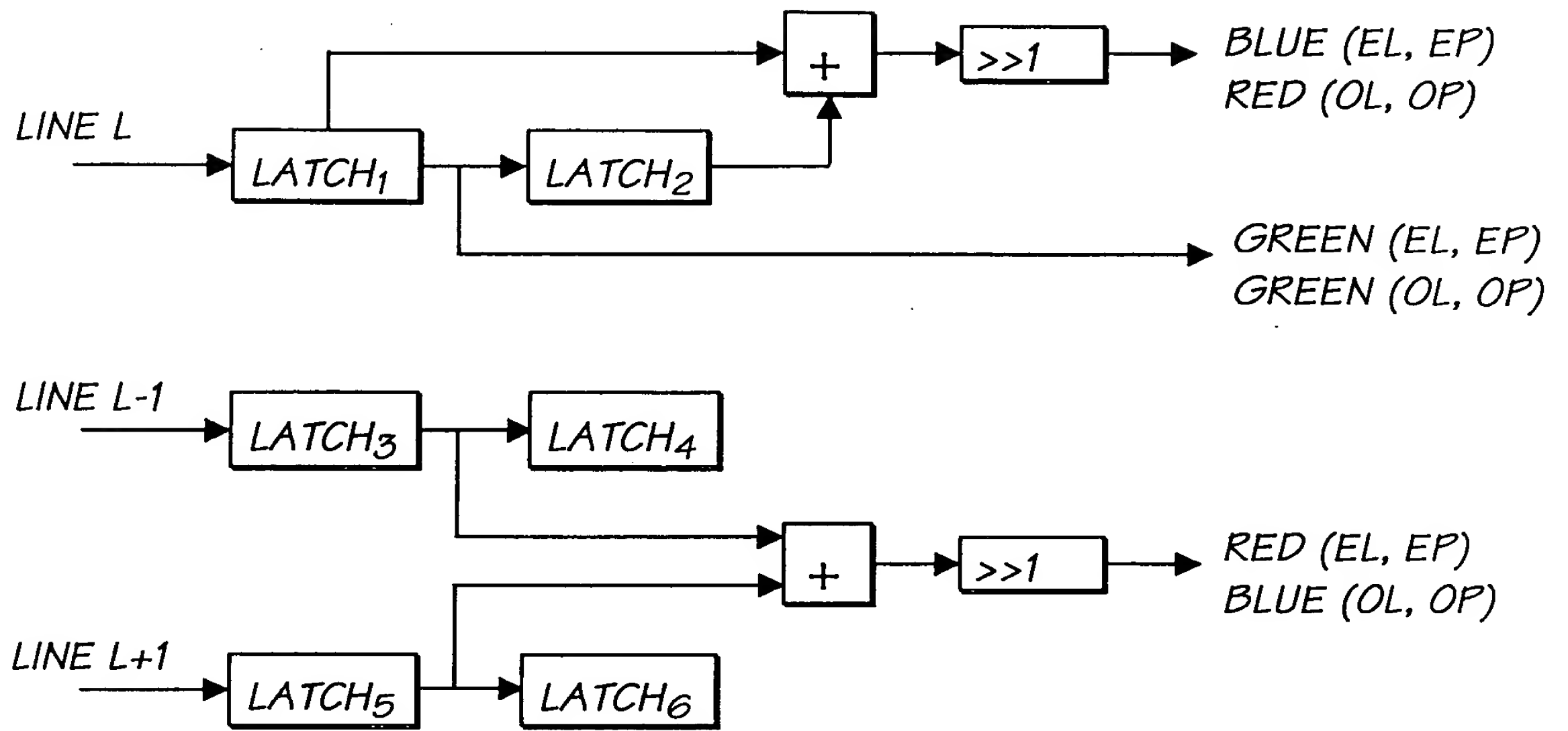


FIG. 115

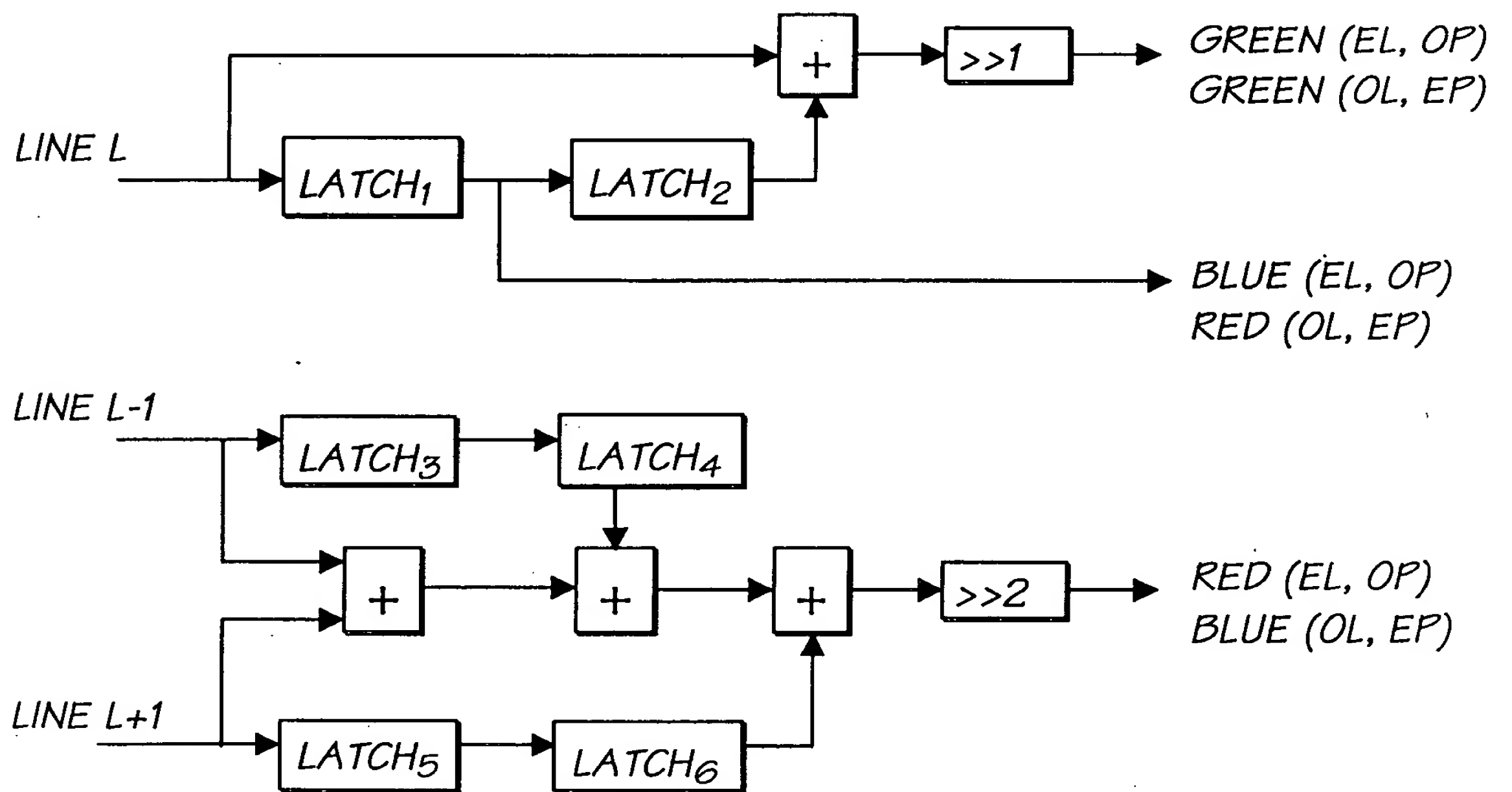


FIG. 116

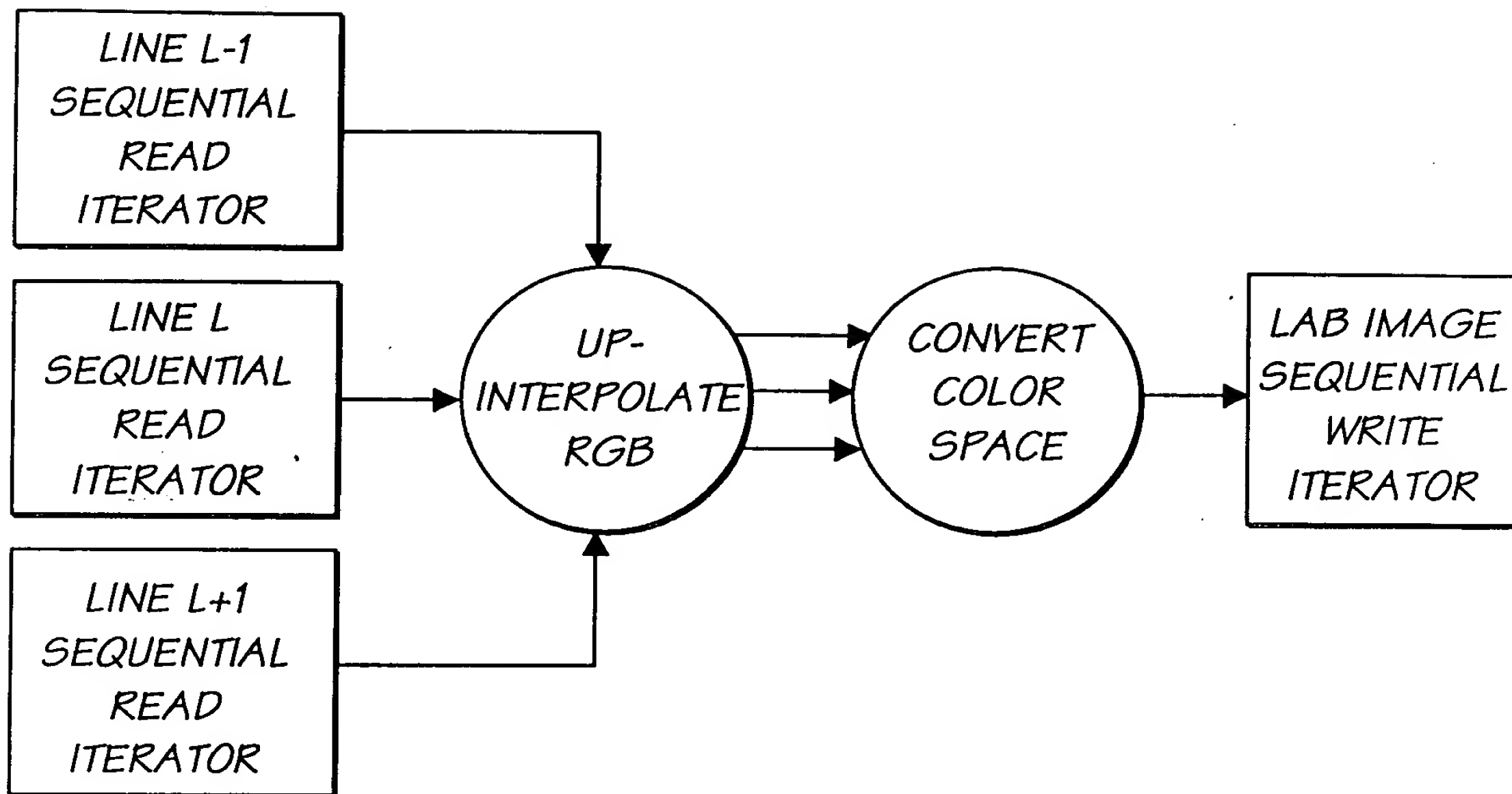


FIG. 117

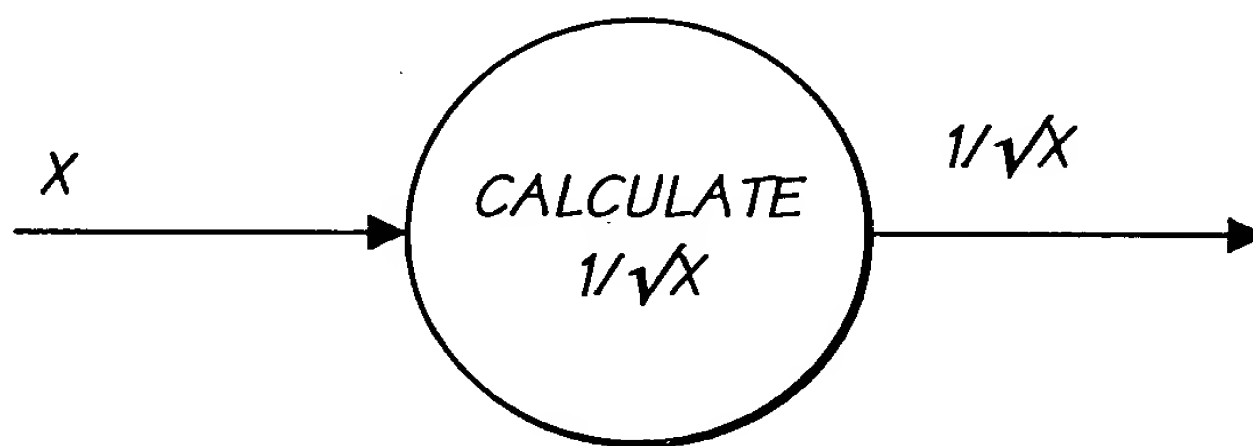


FIG. 118

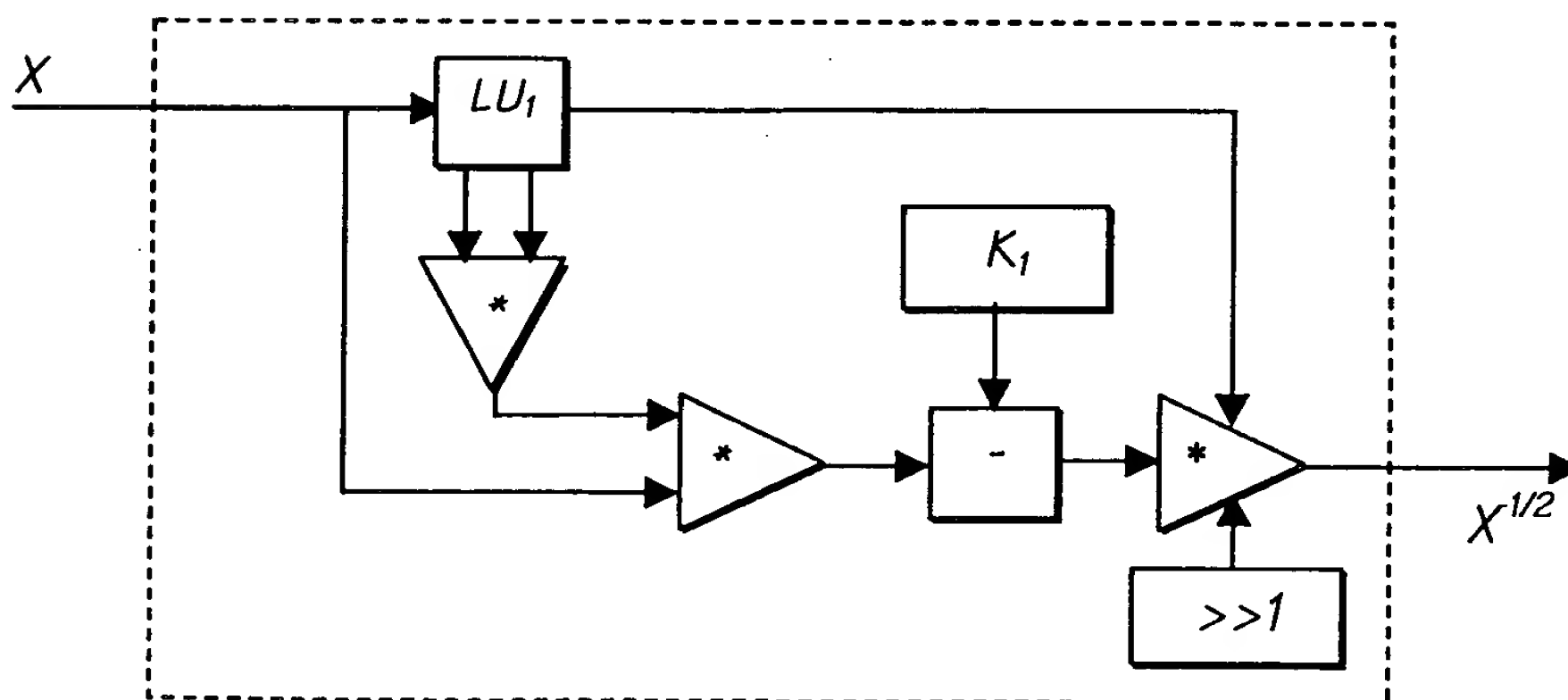


FIG. 119

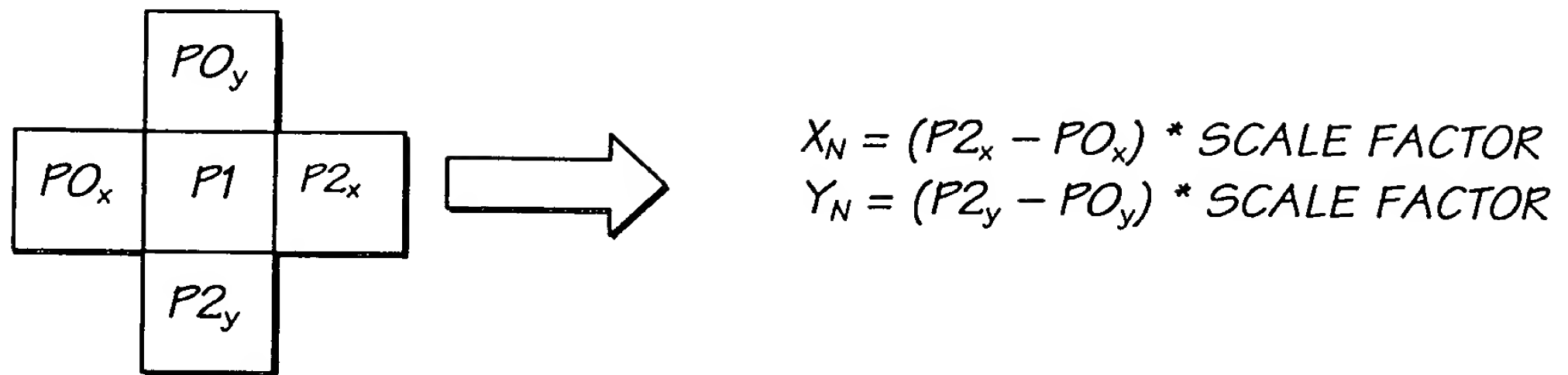


FIG. 120

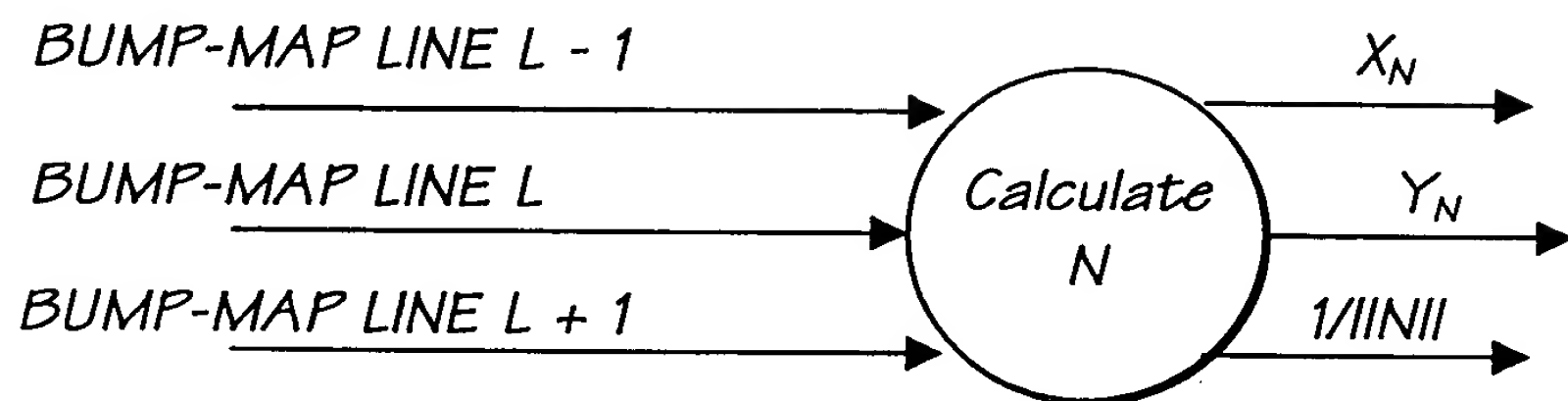


FIG. 121

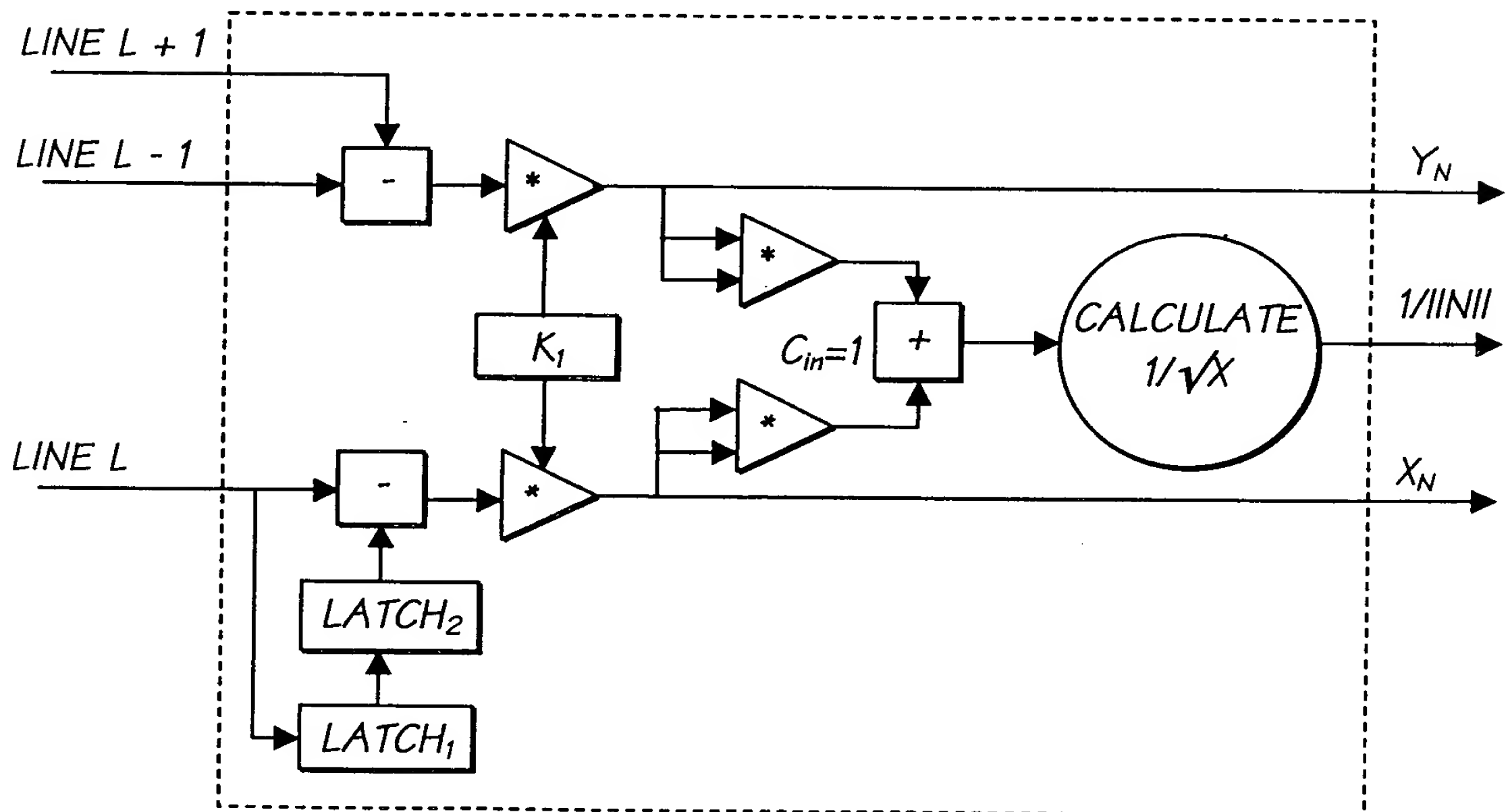


FIG. 122



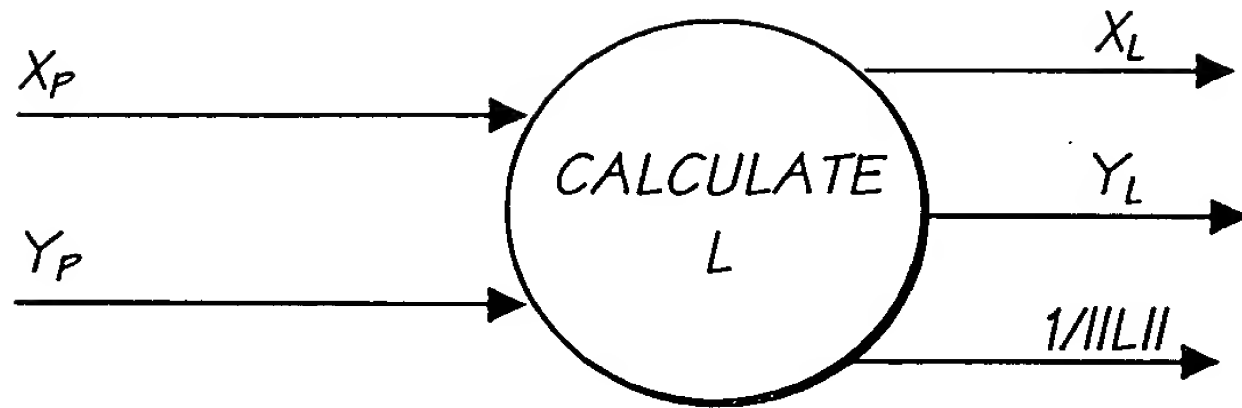


FIG. 123

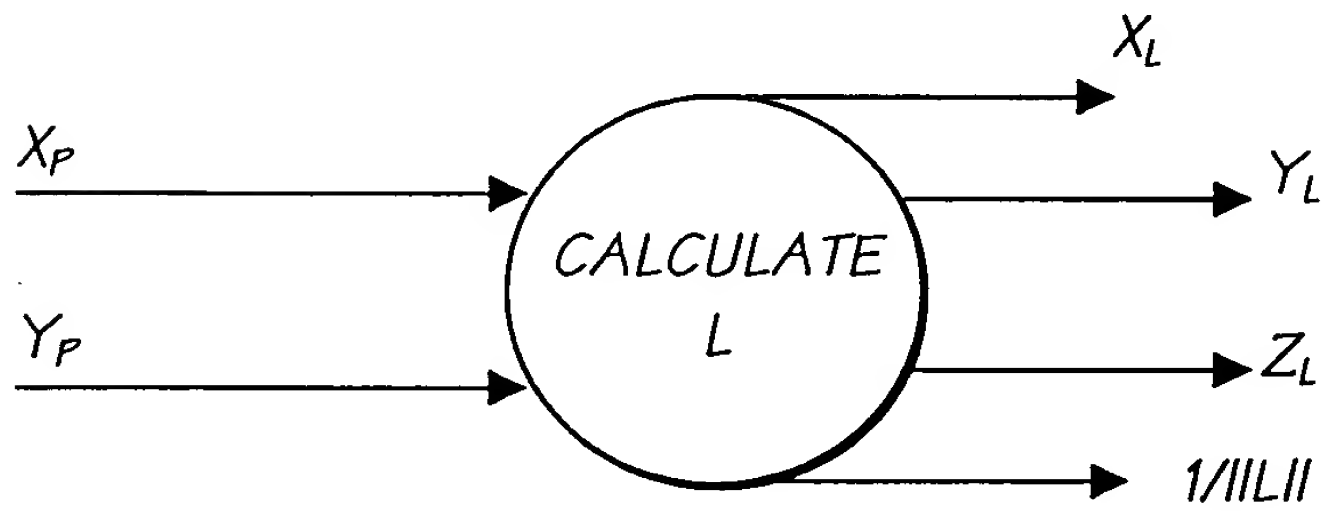


FIG. 124

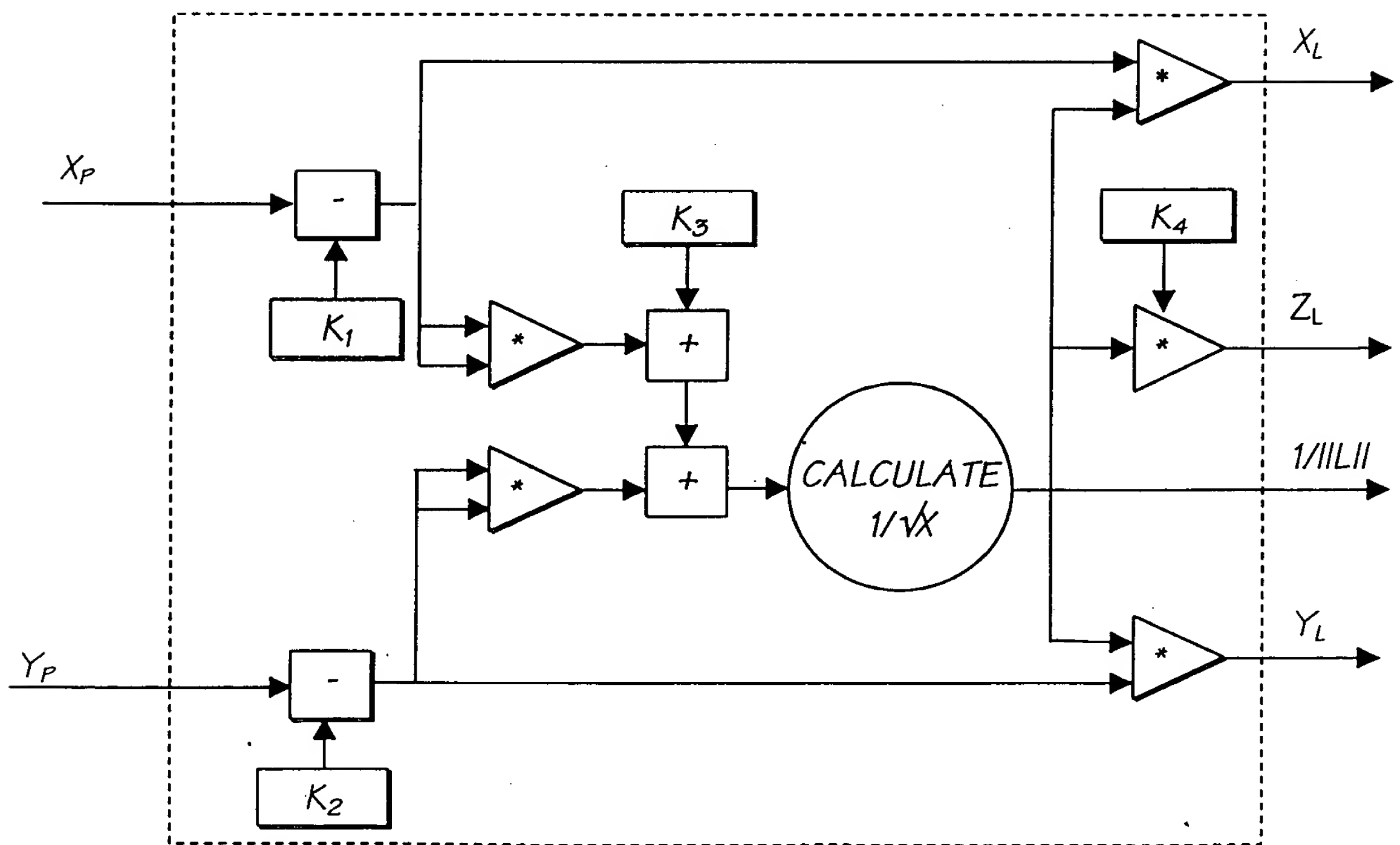


FIG. 125

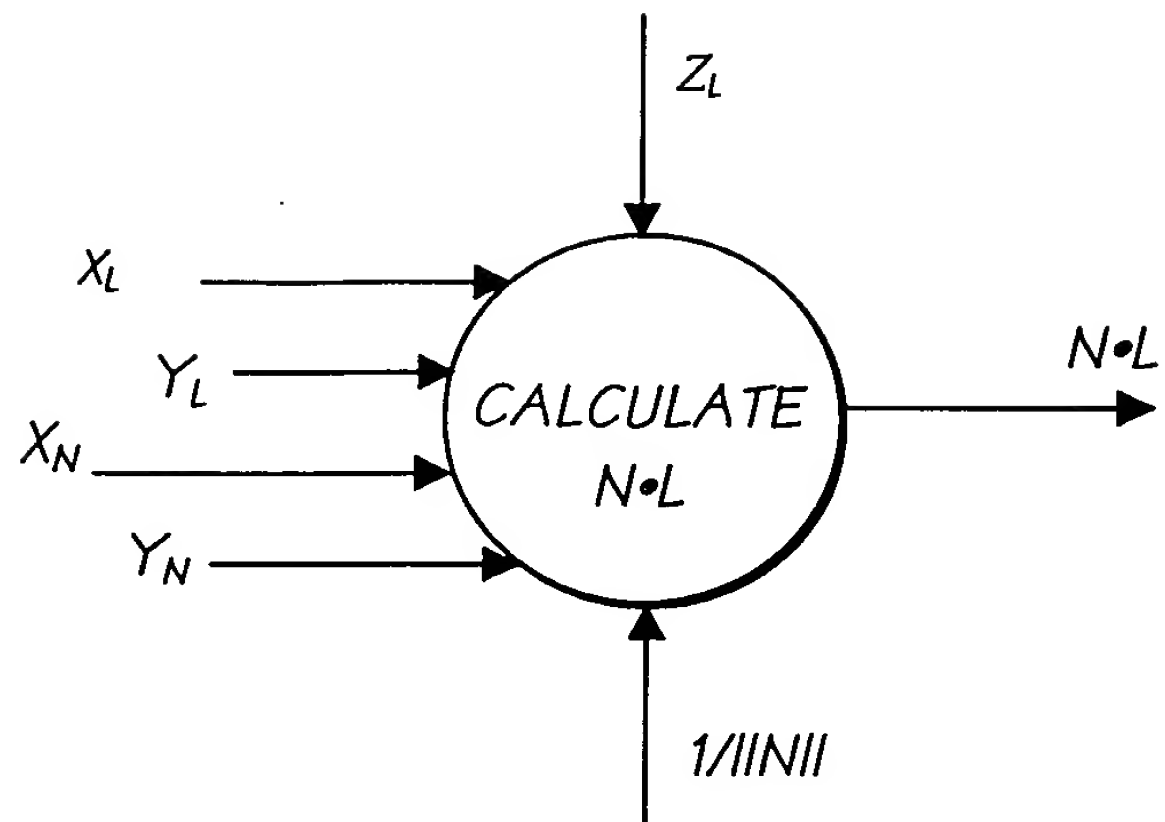


FIG. 126

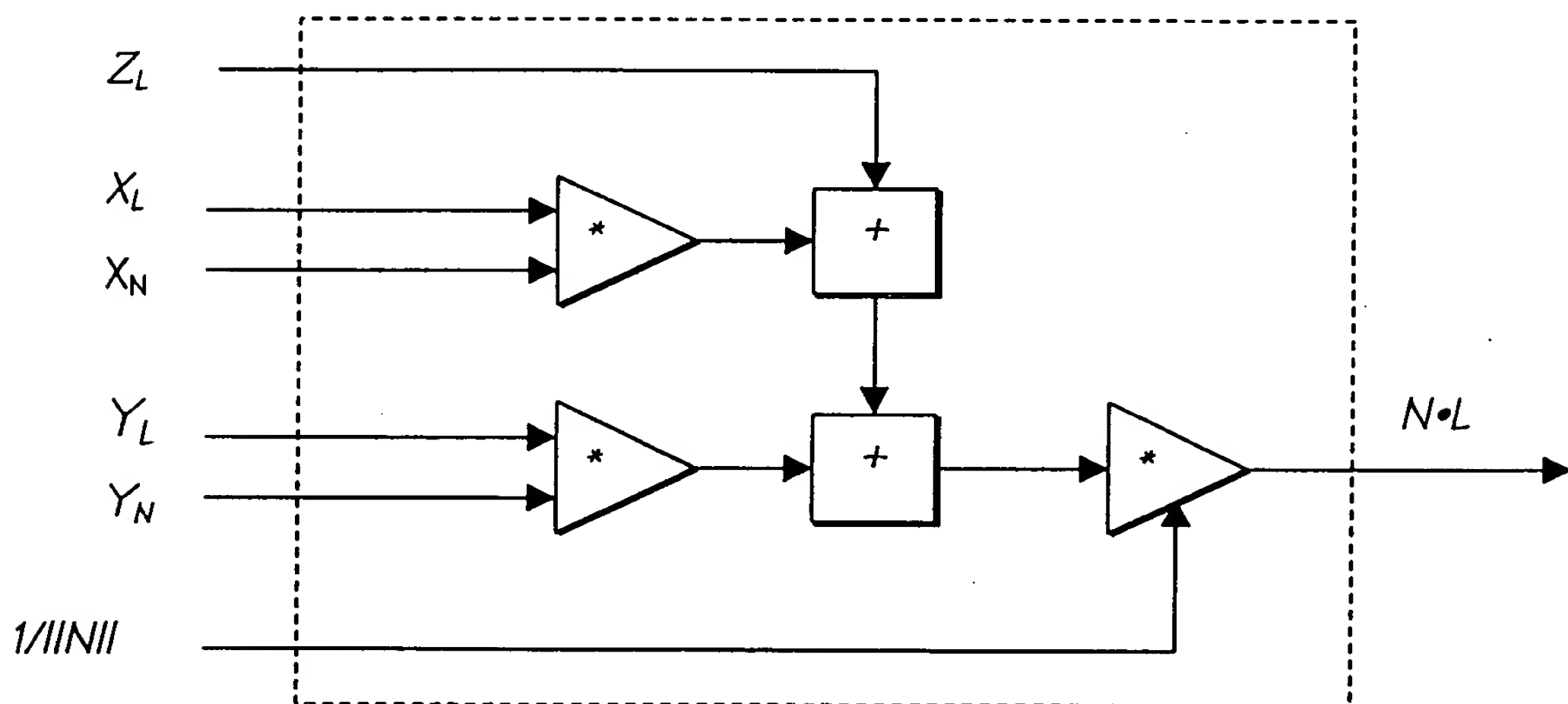


FIG. 127

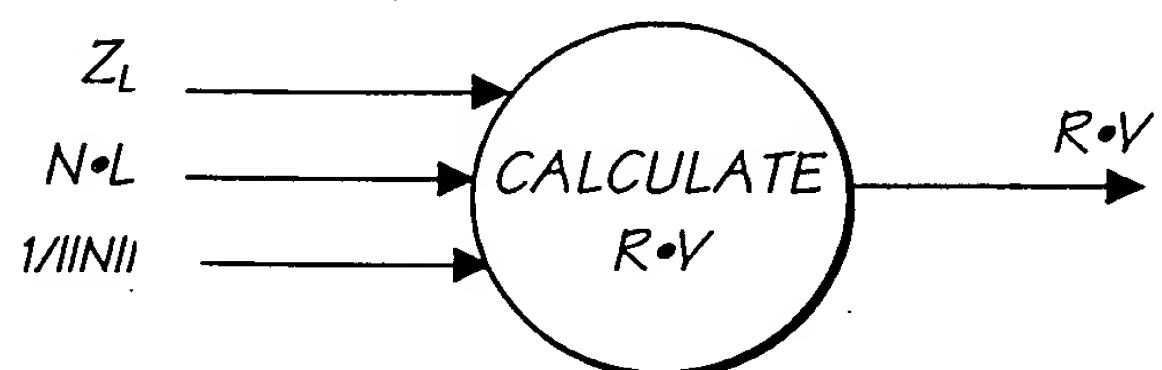


FIG. 128

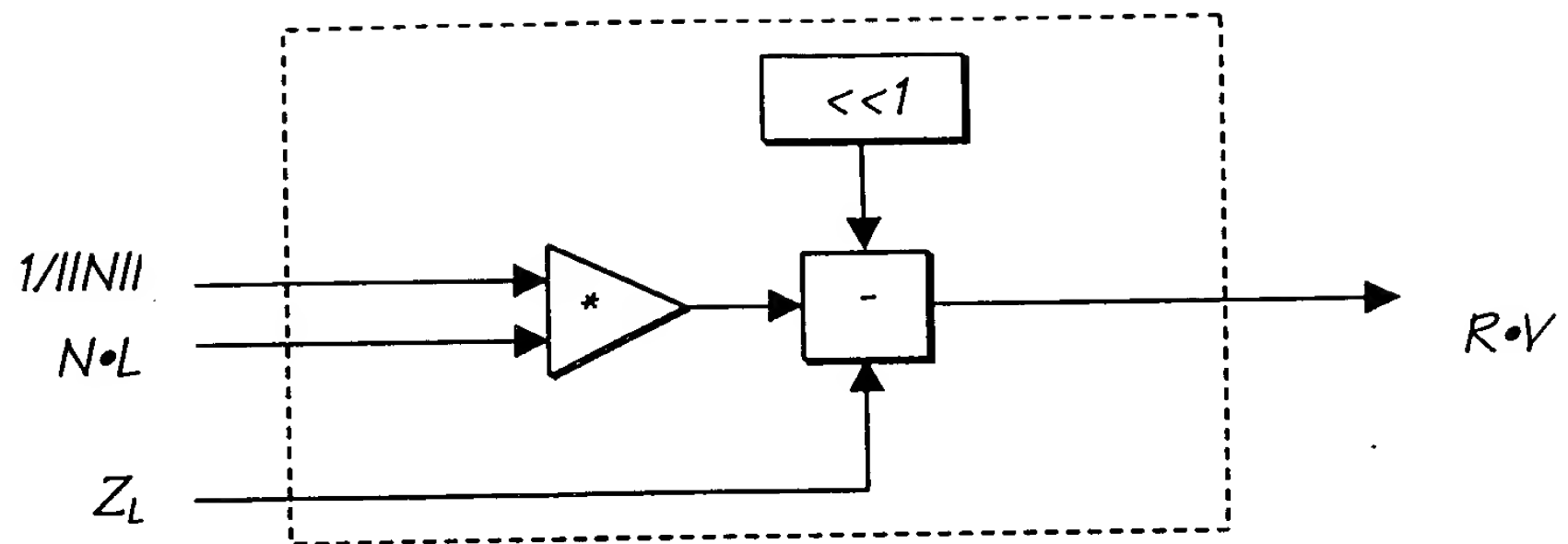


FIG. 129

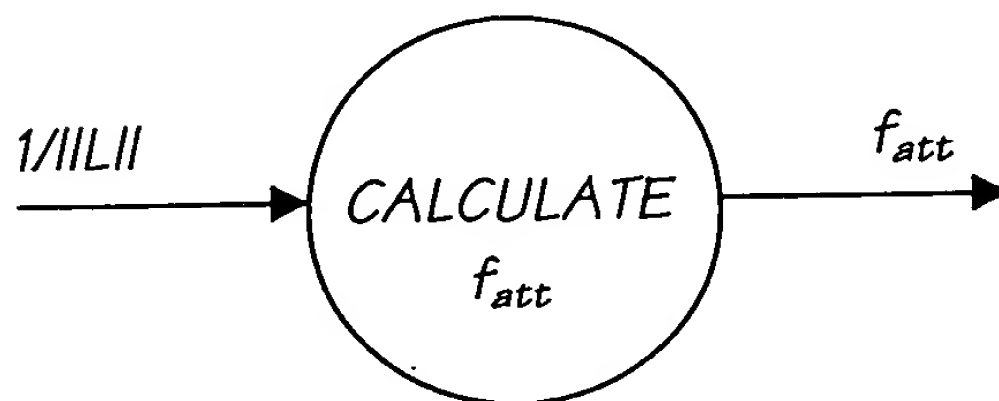


FIG. 130

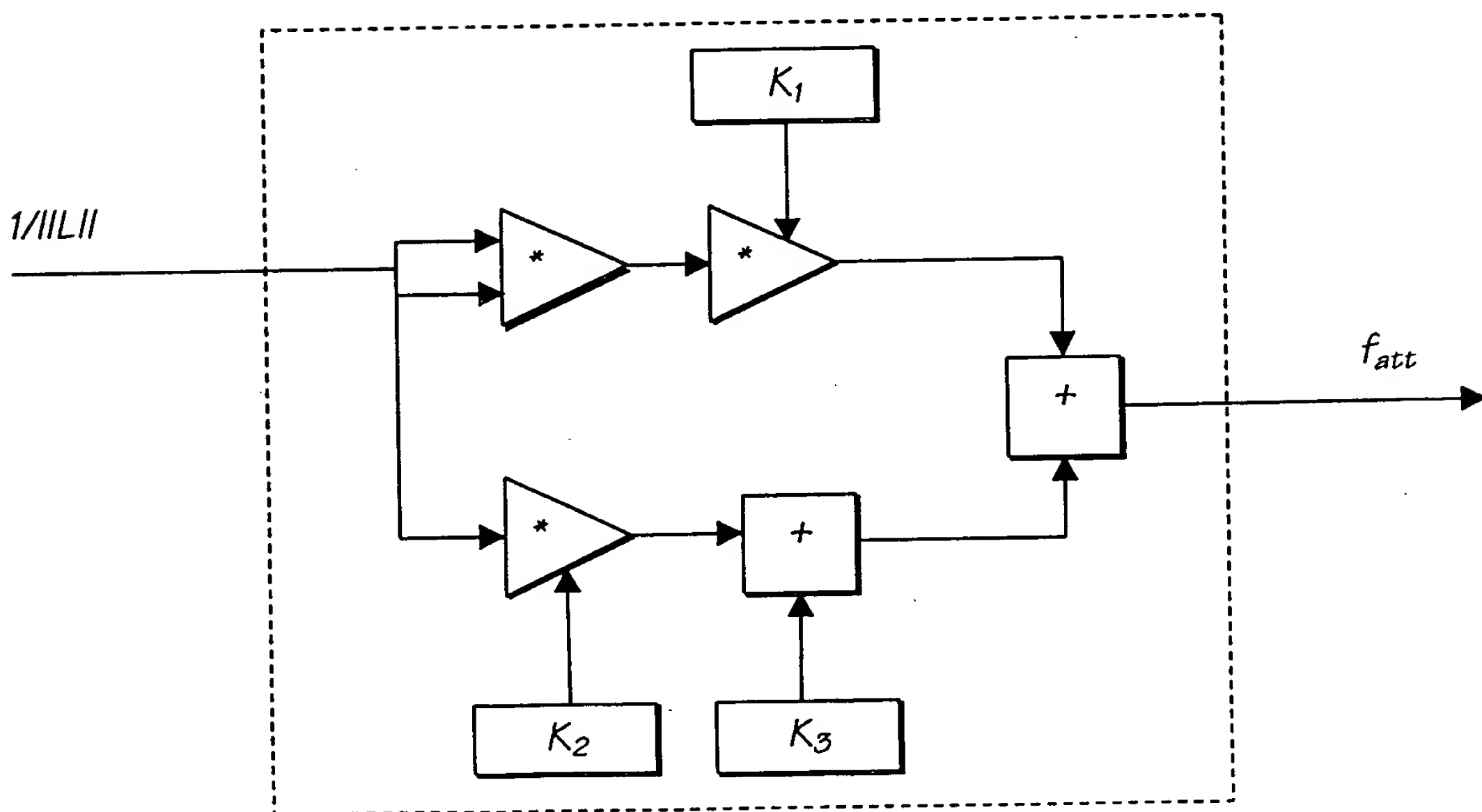


FIG. 131

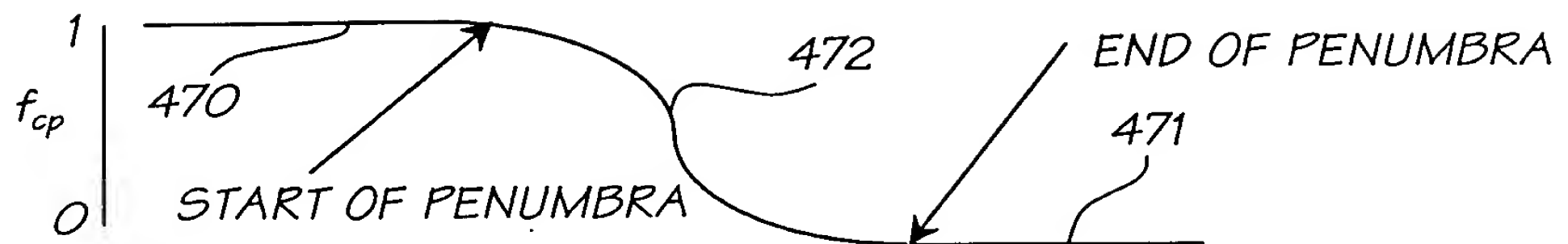


FIG. 132

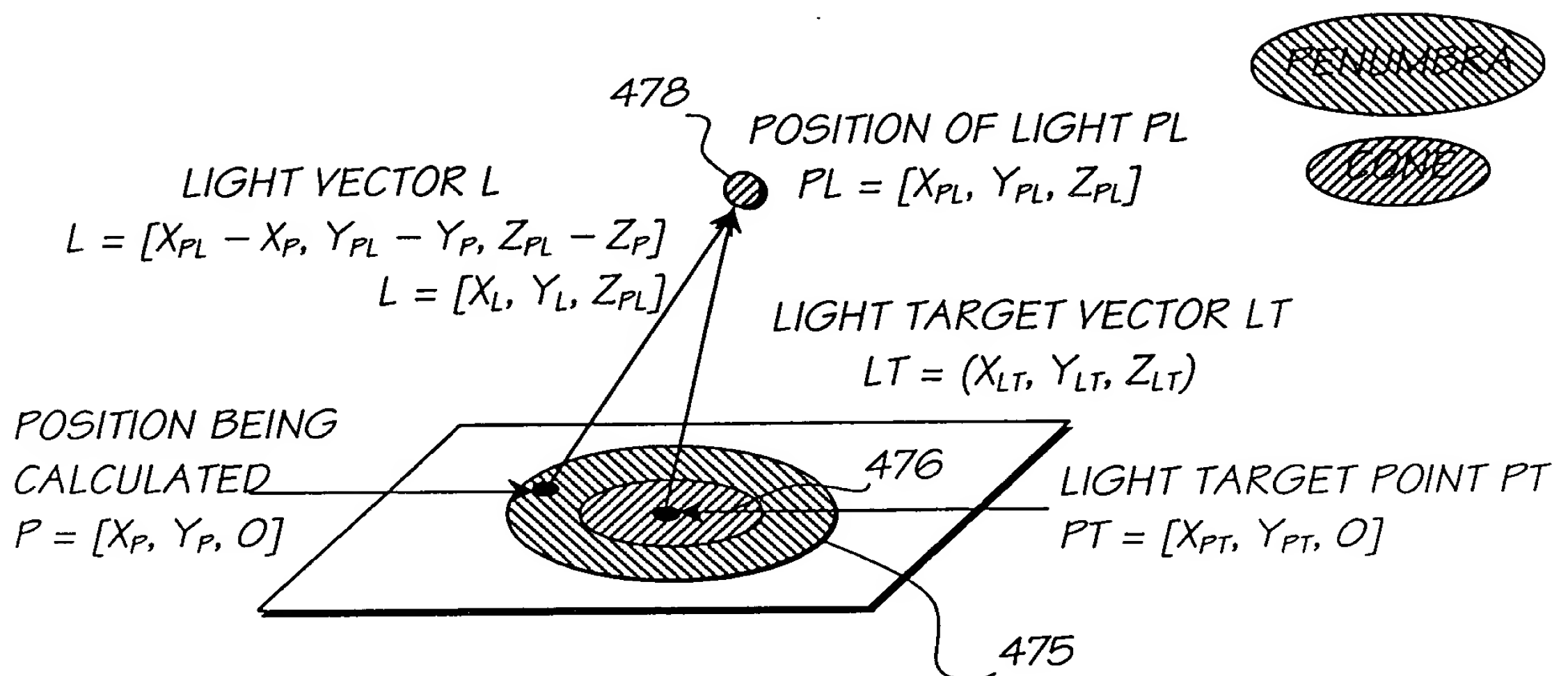


FIG. 133

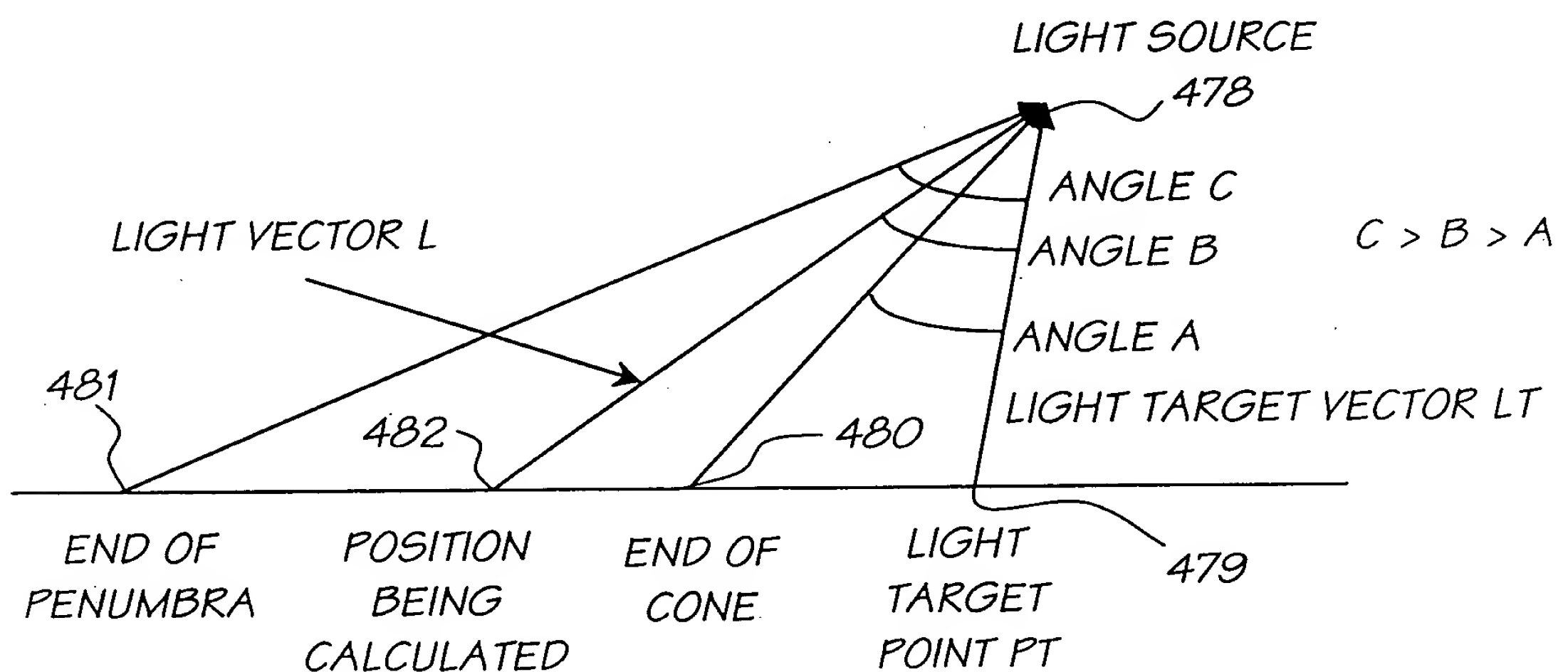


FIG. 134

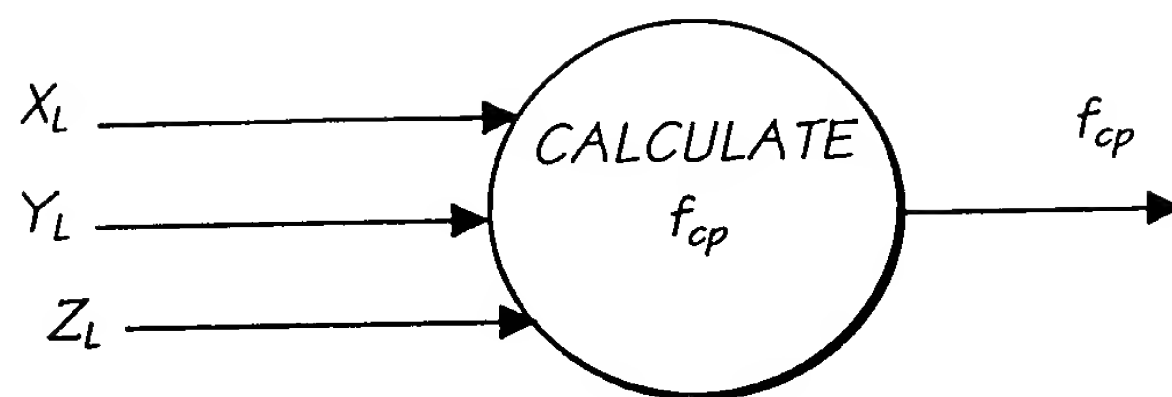


FIG. 135

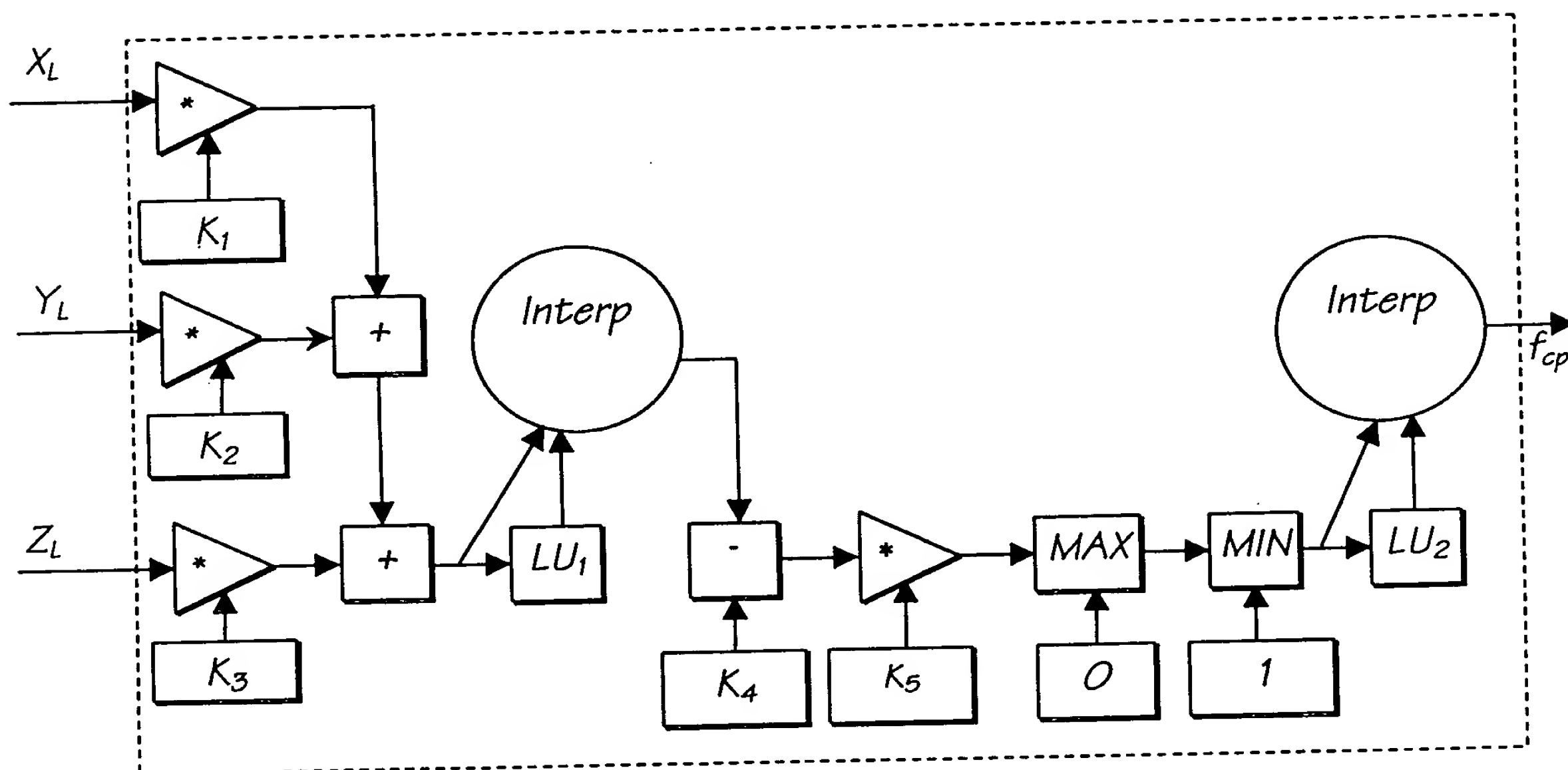


FIG. 136

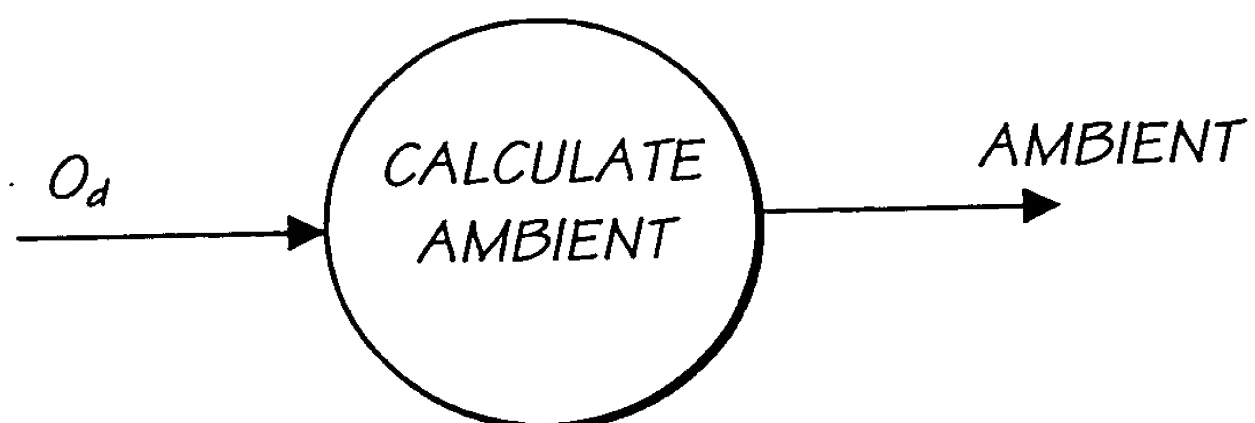


FIG. 137

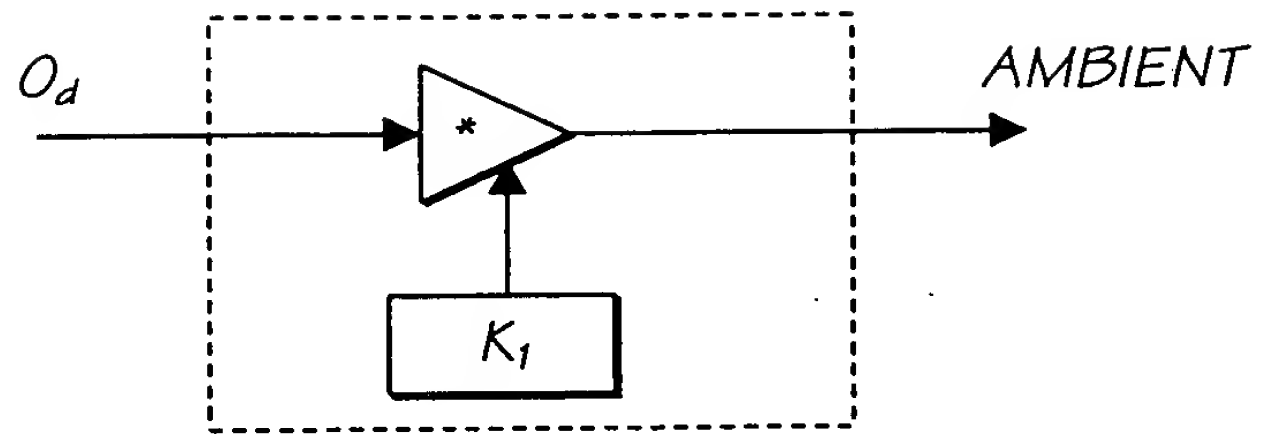


FIG. 138

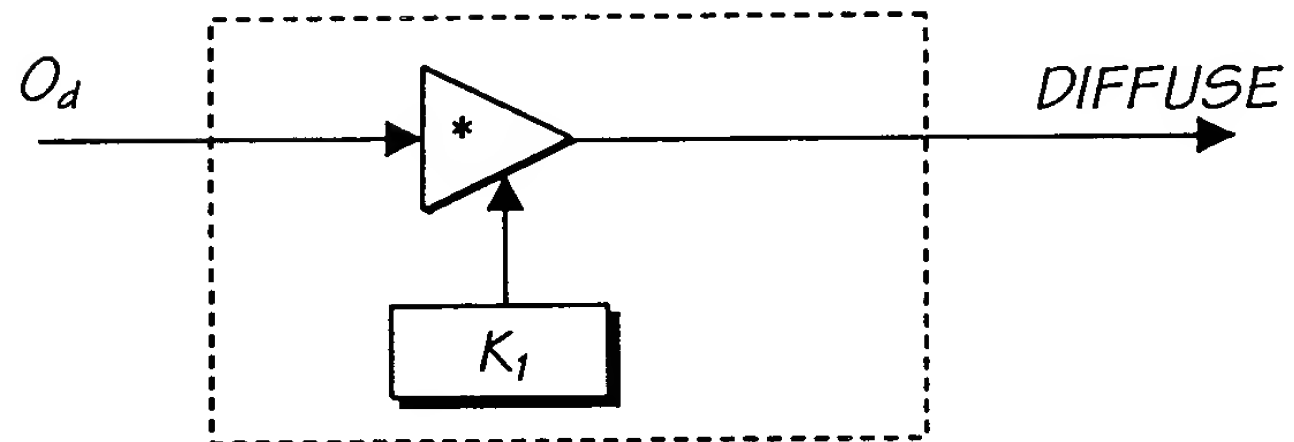


FIG. 139

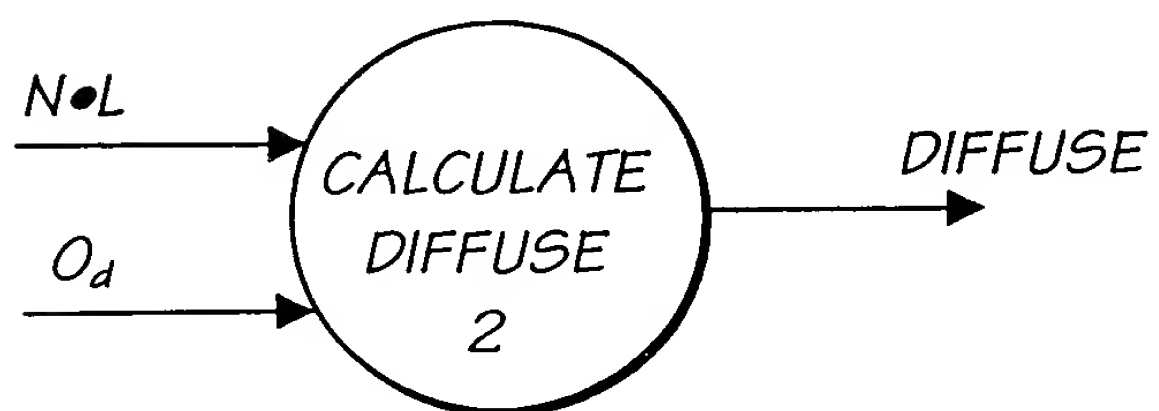


FIG. 140

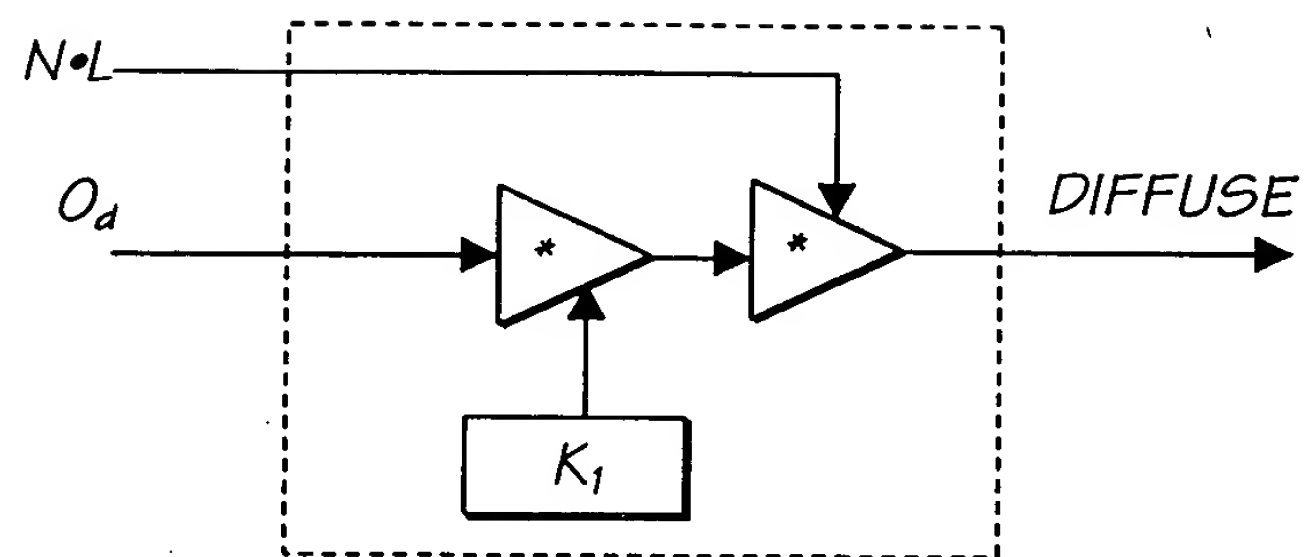


FIG. 141

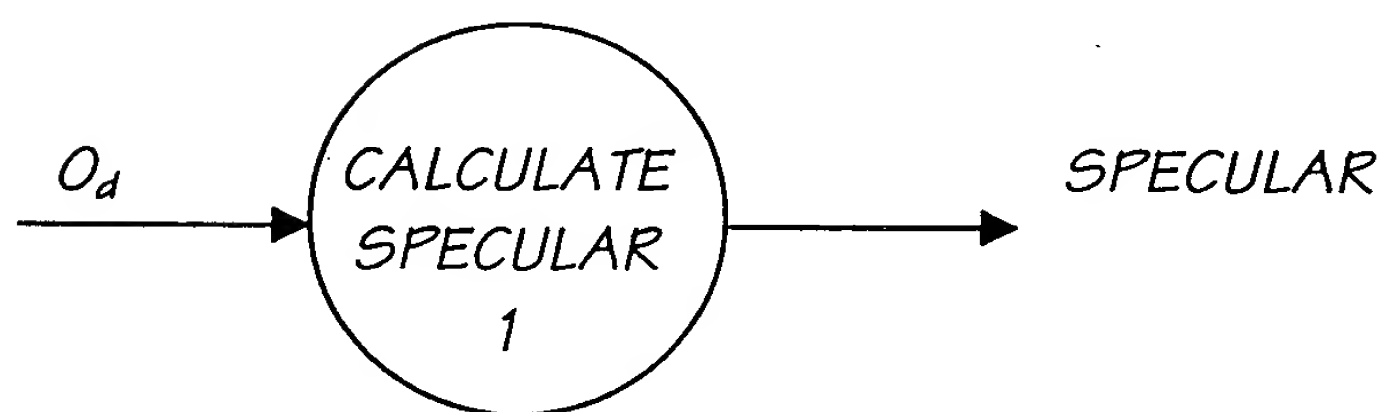


FIG. 142

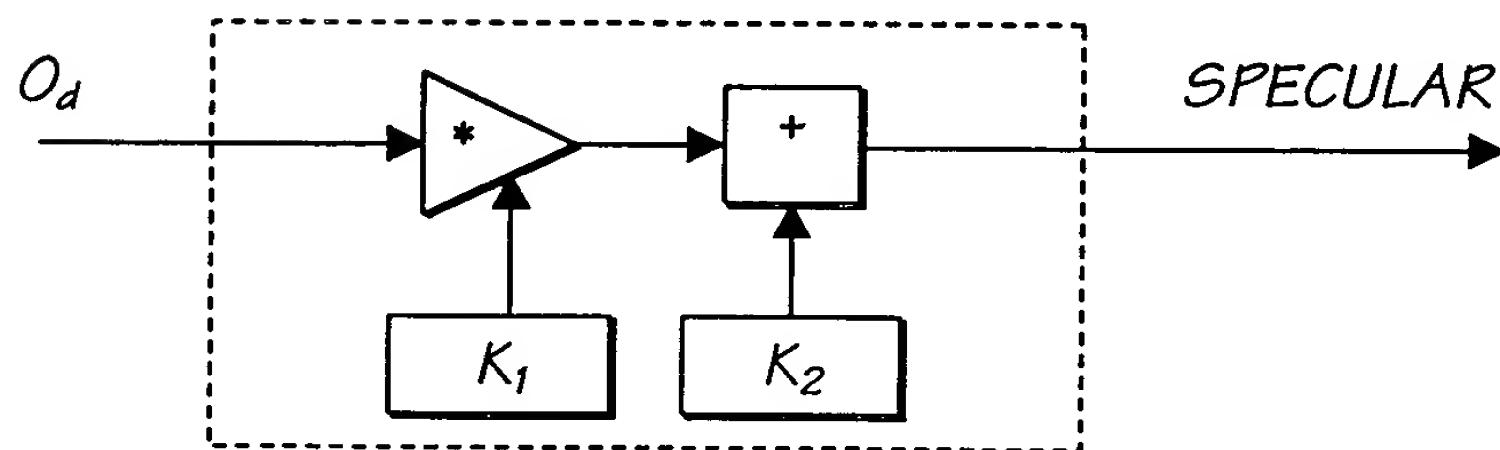


FIG. 143

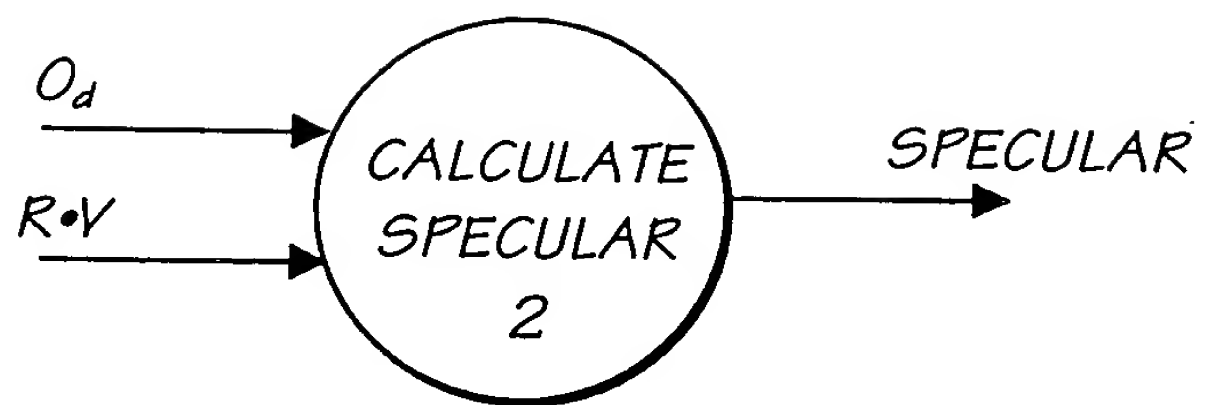


FIG. 144

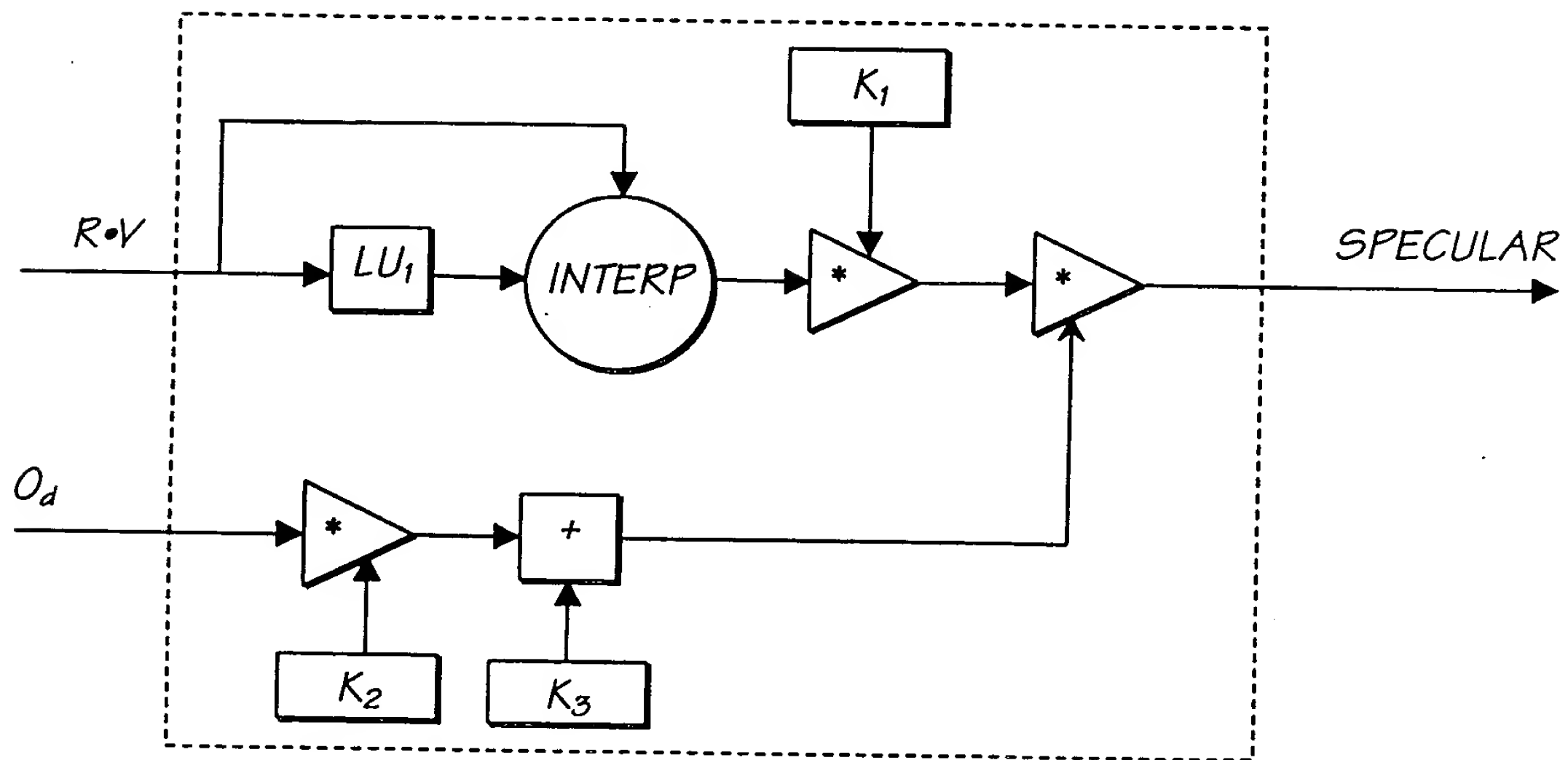


FIG. 145



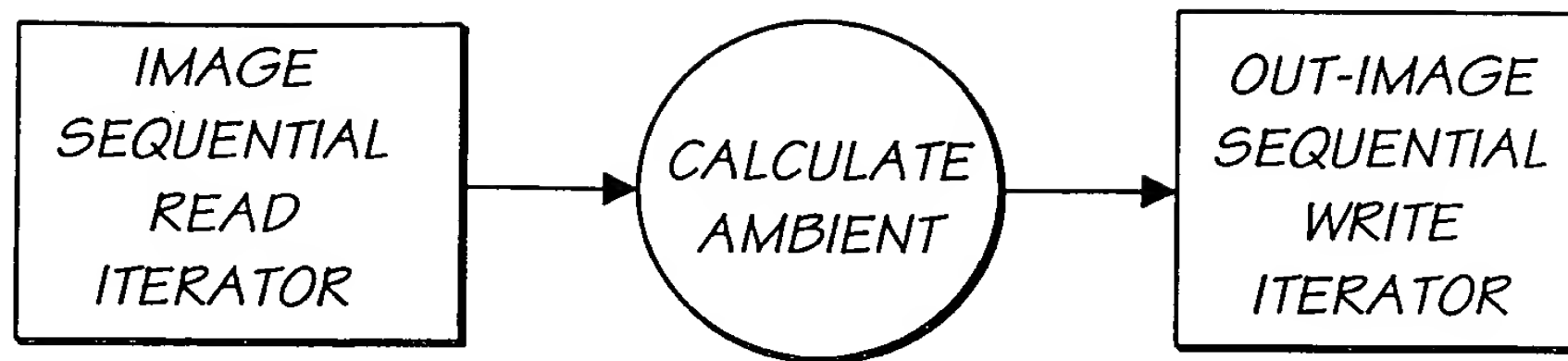
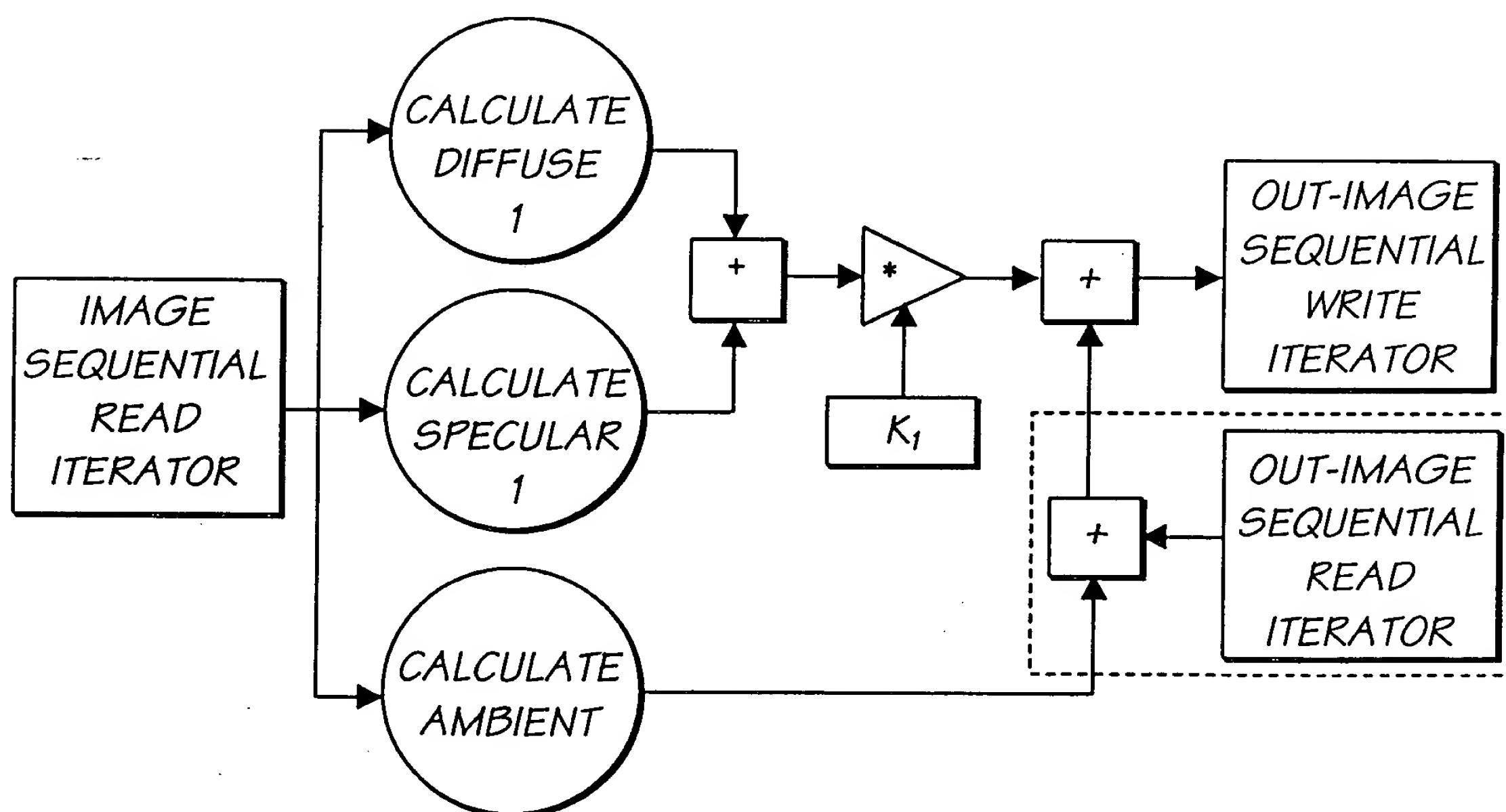


FIG. 146



   2<sup>ND</sup> AND  
 SUBSEQUENT LIGHTS

FIG. 147

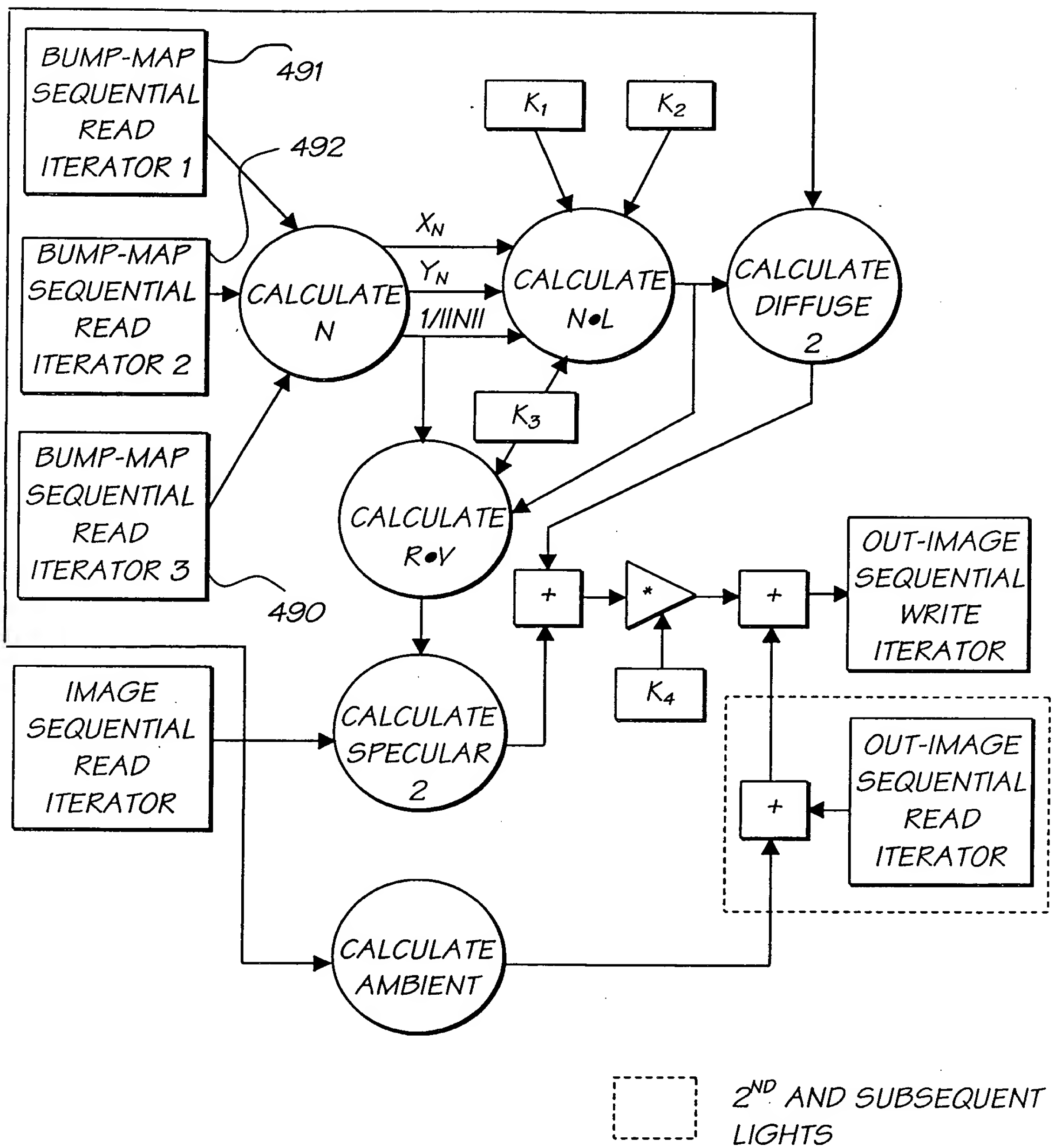


FIG. 148

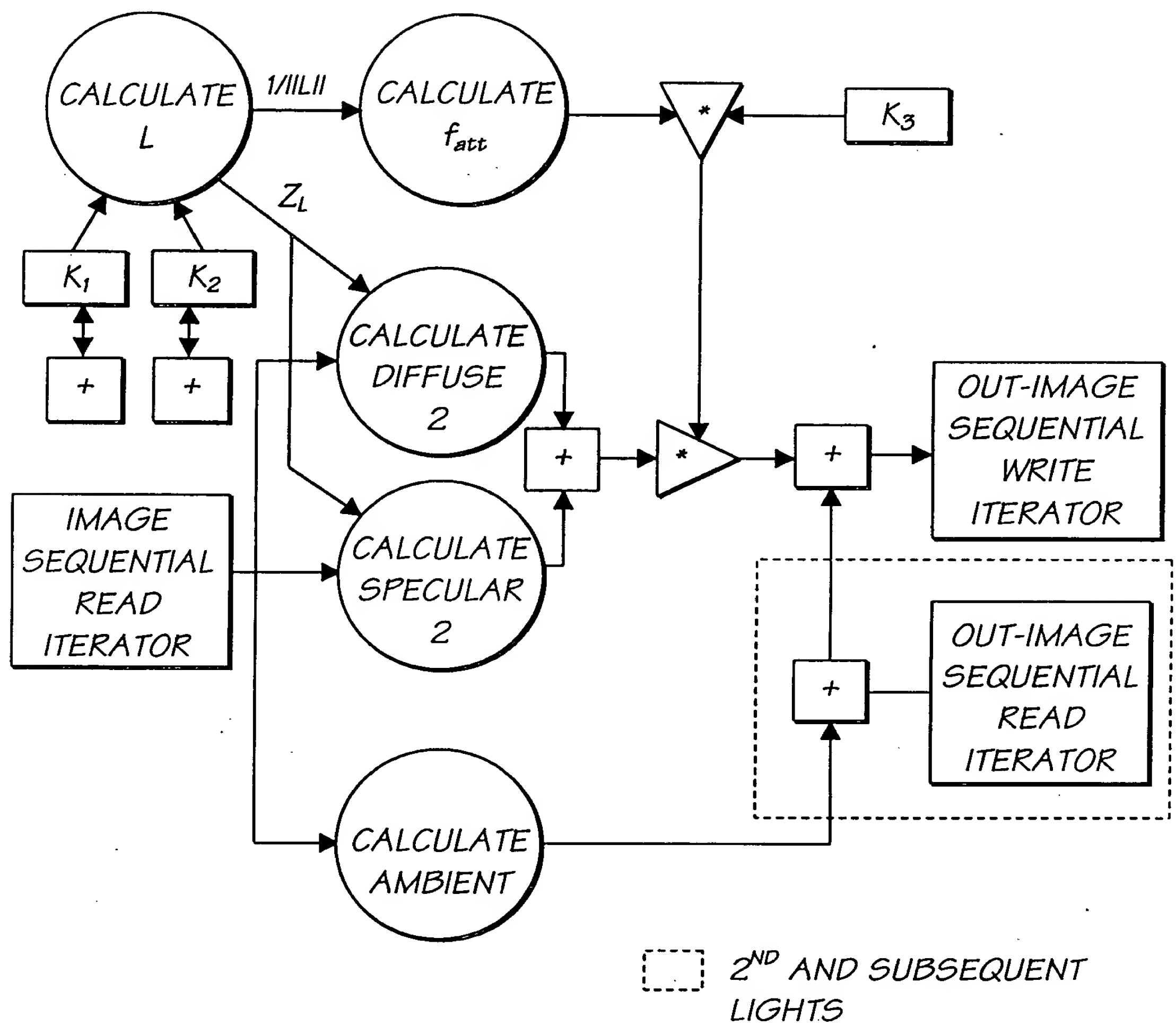


FIG. 149

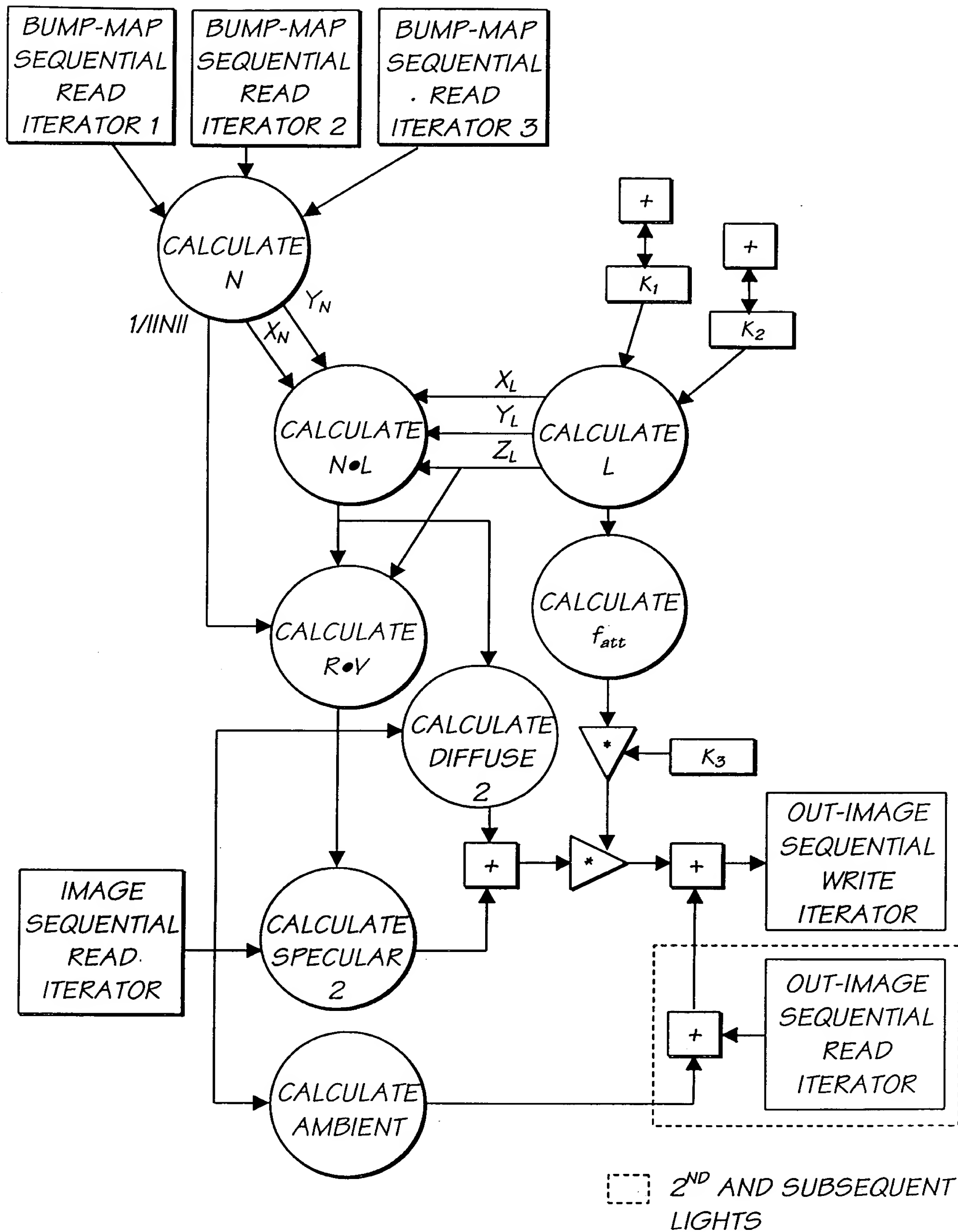


FIG. 150

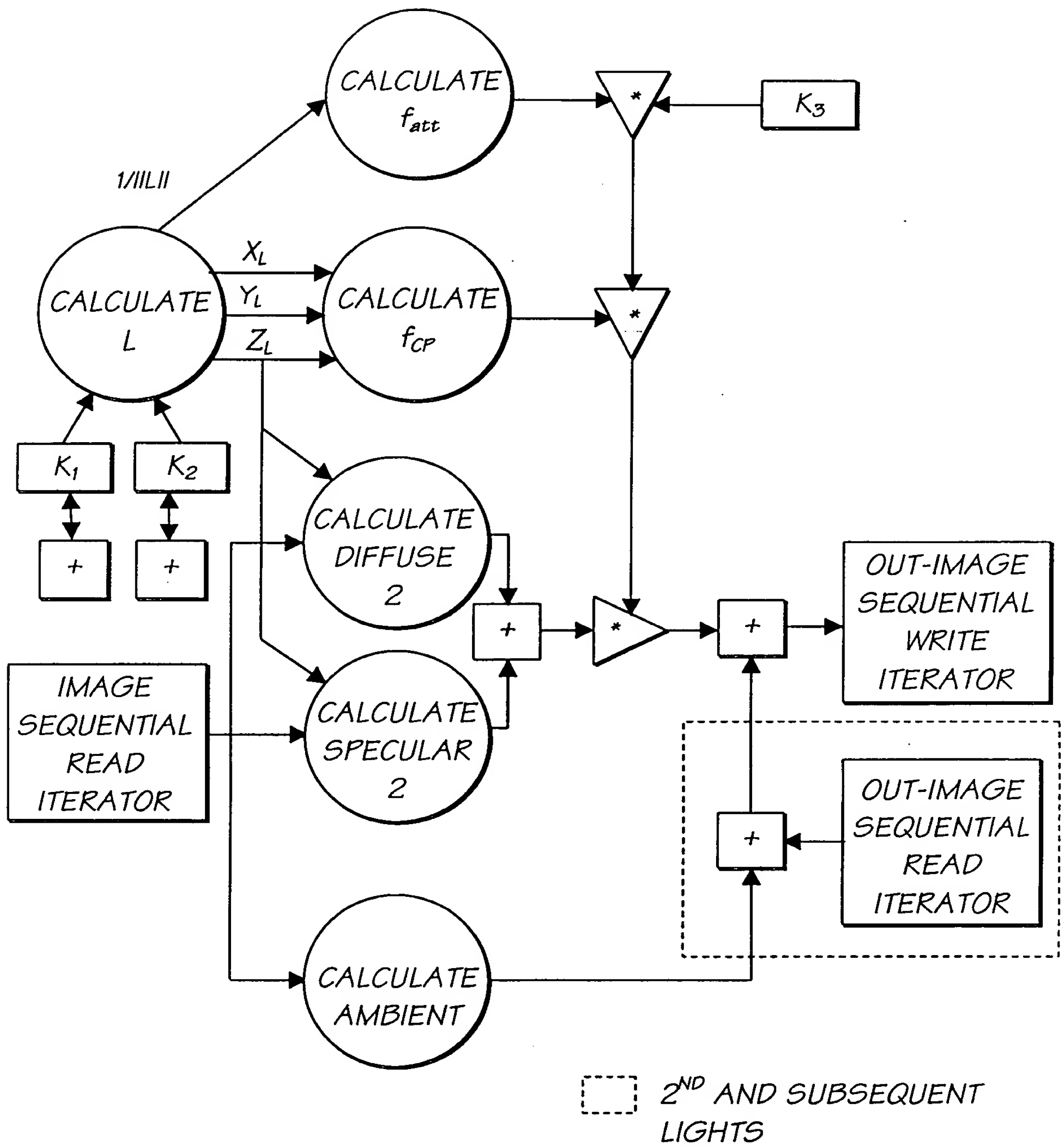


FIG. 151

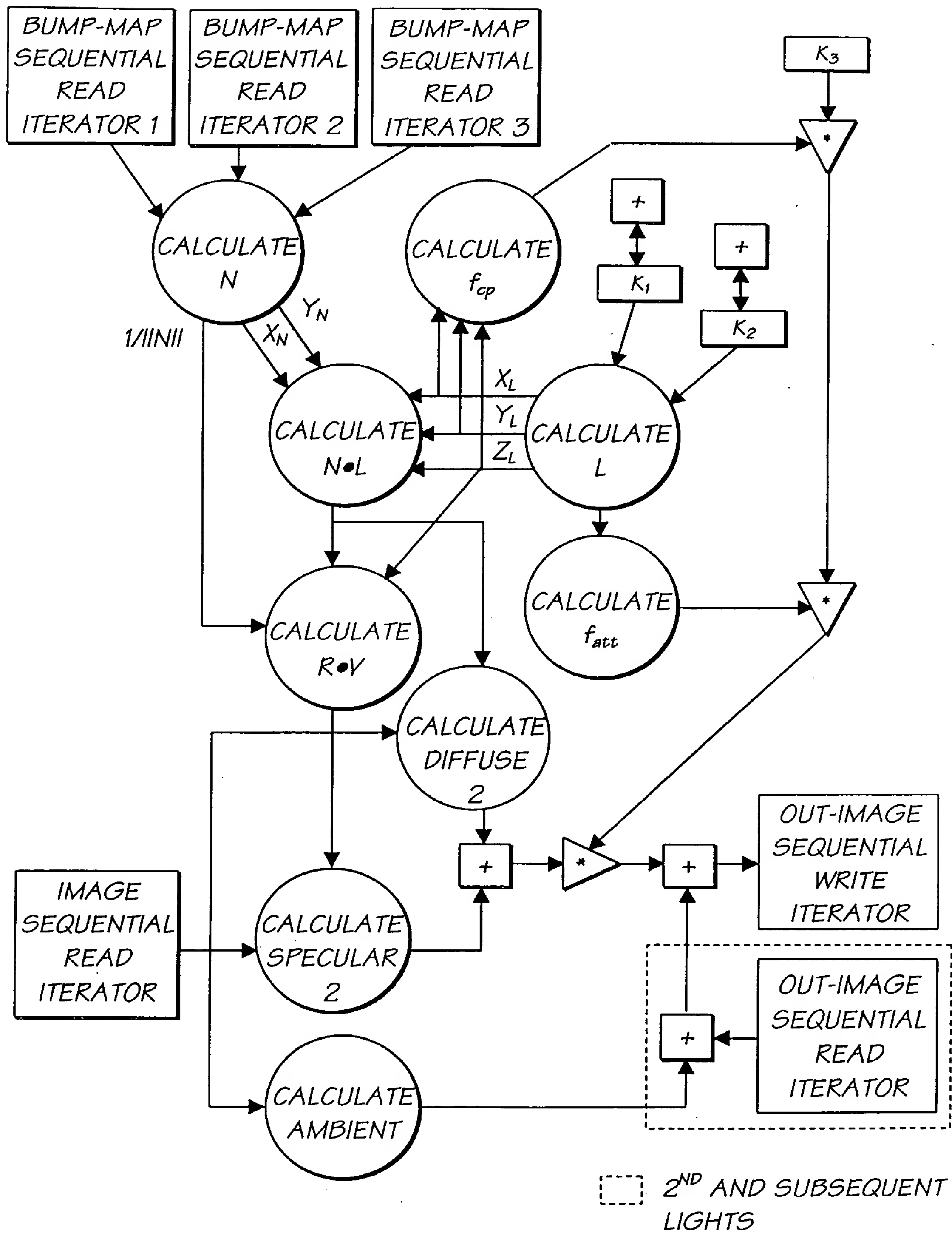
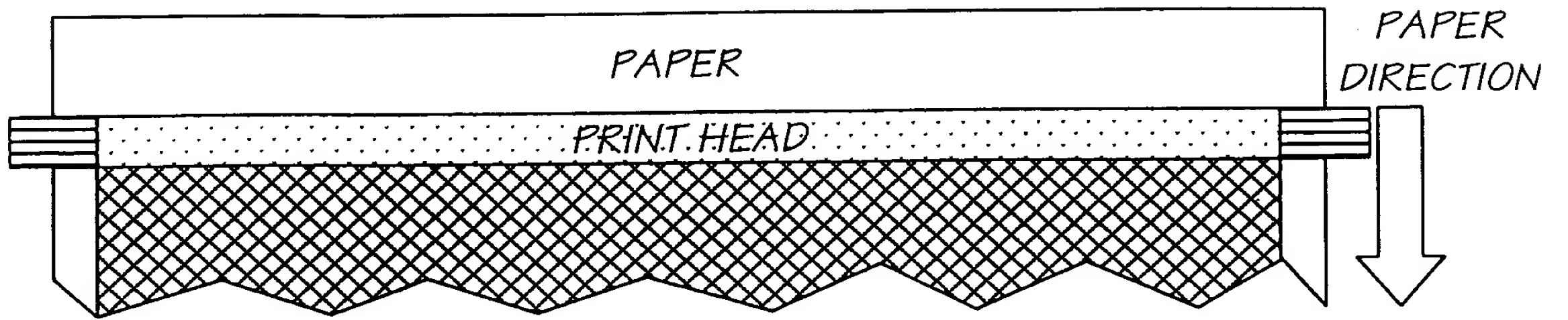


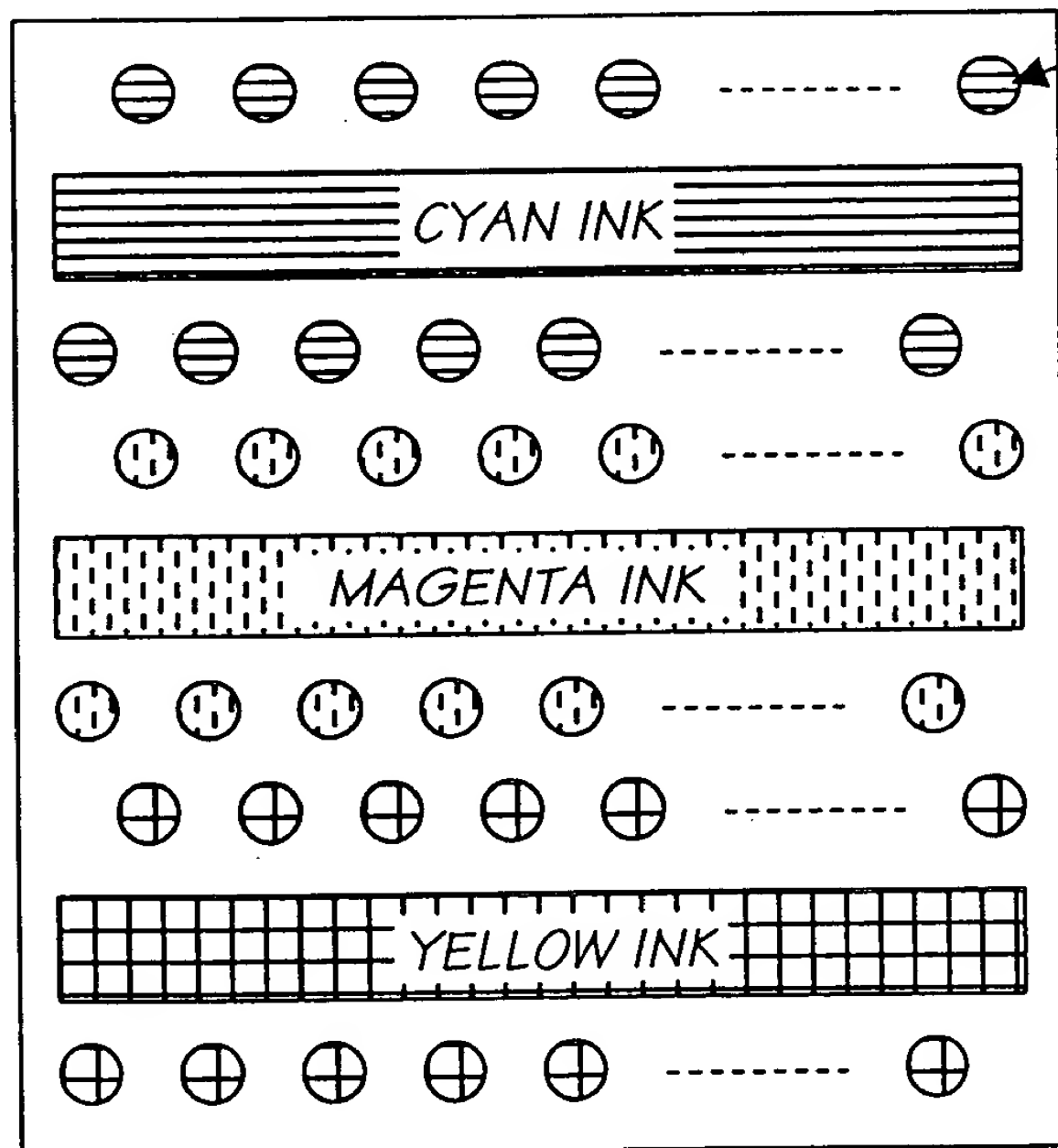
FIG. 152



8 PRINT HEAD SEGMENTS IN PRINT HEAD

SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT
0	1	2	3	4	5	6	7

1250  $\mu\text{M}$  (375 DOTS PER SEGMENT ROW,  
OR 750 DOTS PER SEGMENT COLOR)



1 DOT IS 16.6 $\mu\text{M}$  IN  
DIAMETER  
(A 100  $\mu\text{M}$  SQUARE =  
6 X 6 = 36 DOTS)

466.6 $\mu\text{M}$   
(28 DOTS)

33.3 $\mu\text{M}$   
(2 DOTS)

133.3 $\mu\text{M}$   
(8 DOTS)

EACH SEGMENT CONTAINS 6 ROWS OF DOTS:  
ODD AND EVEN CYAN, MAGENTA, AND YELLOW.

FIG. 153

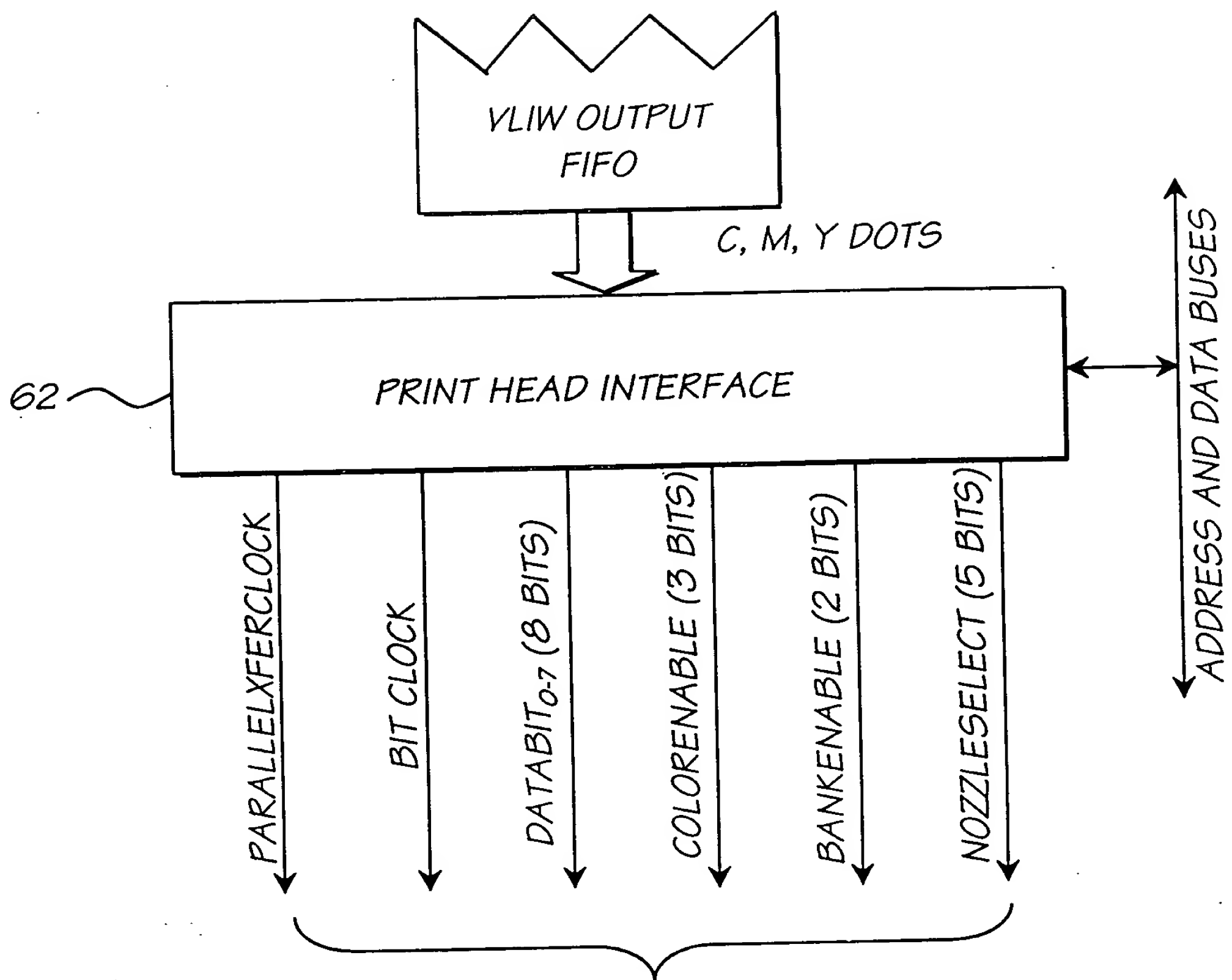


FIG. 154

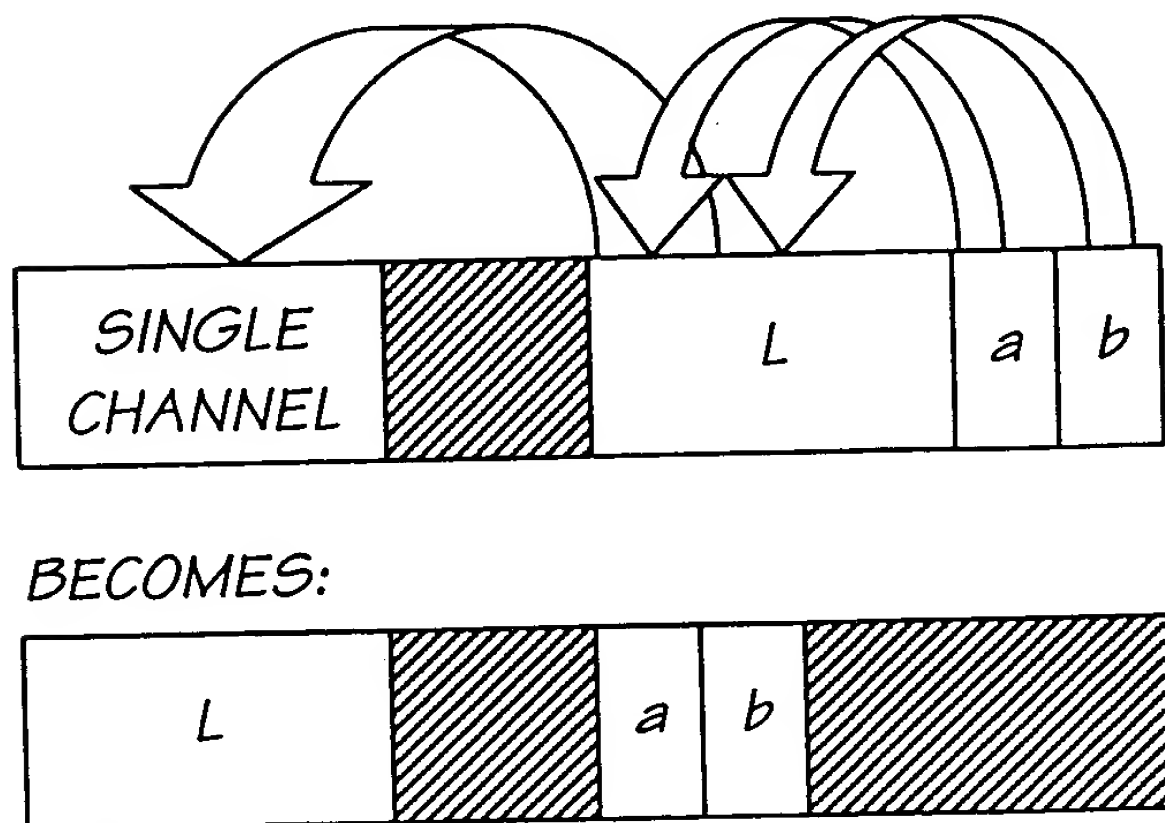
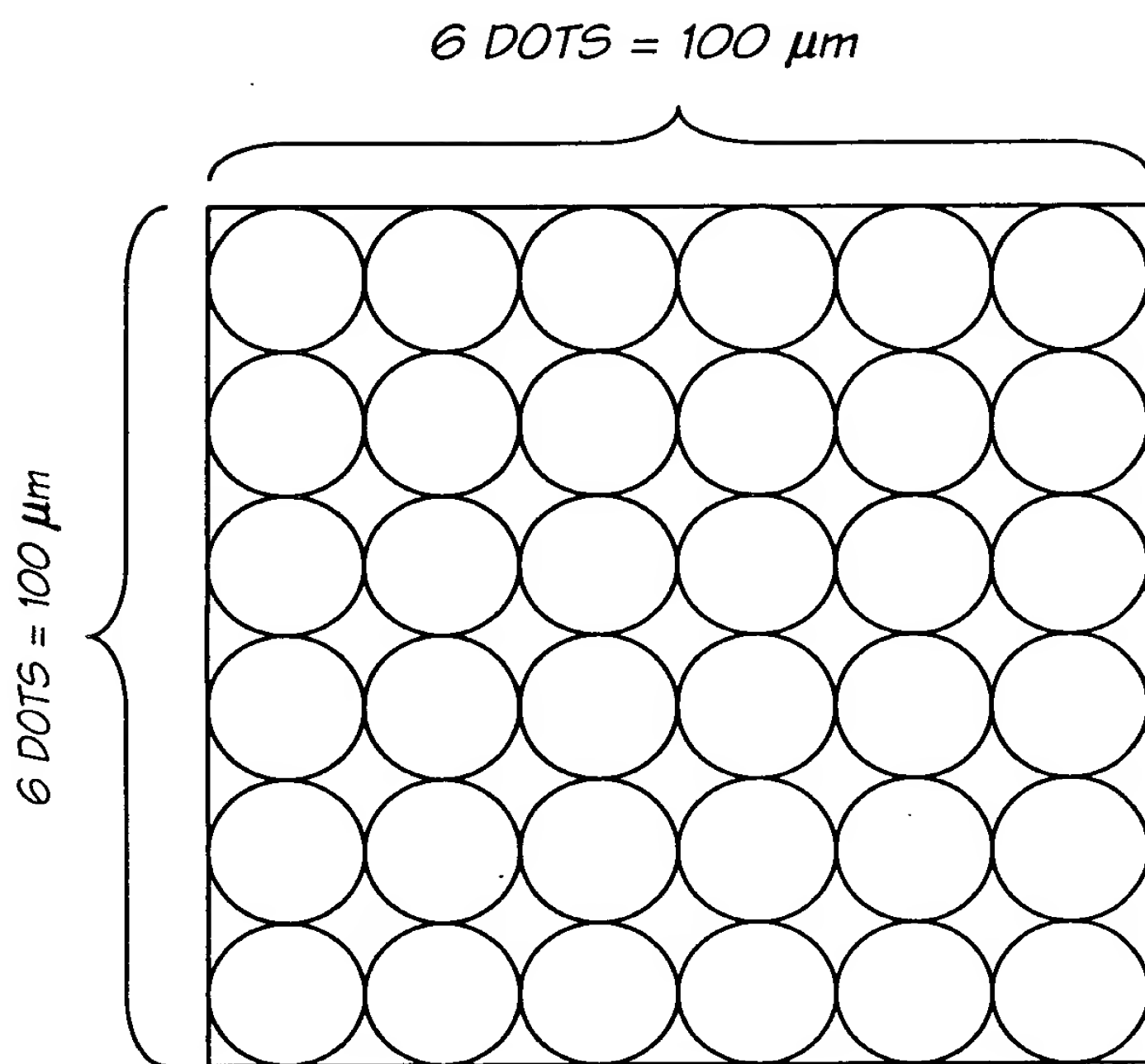


FIG. 155





1 PIXEL = 6 X 6 DOTS  
= 36 DOTS  
= 100 μm SQUARE

FIG. 156

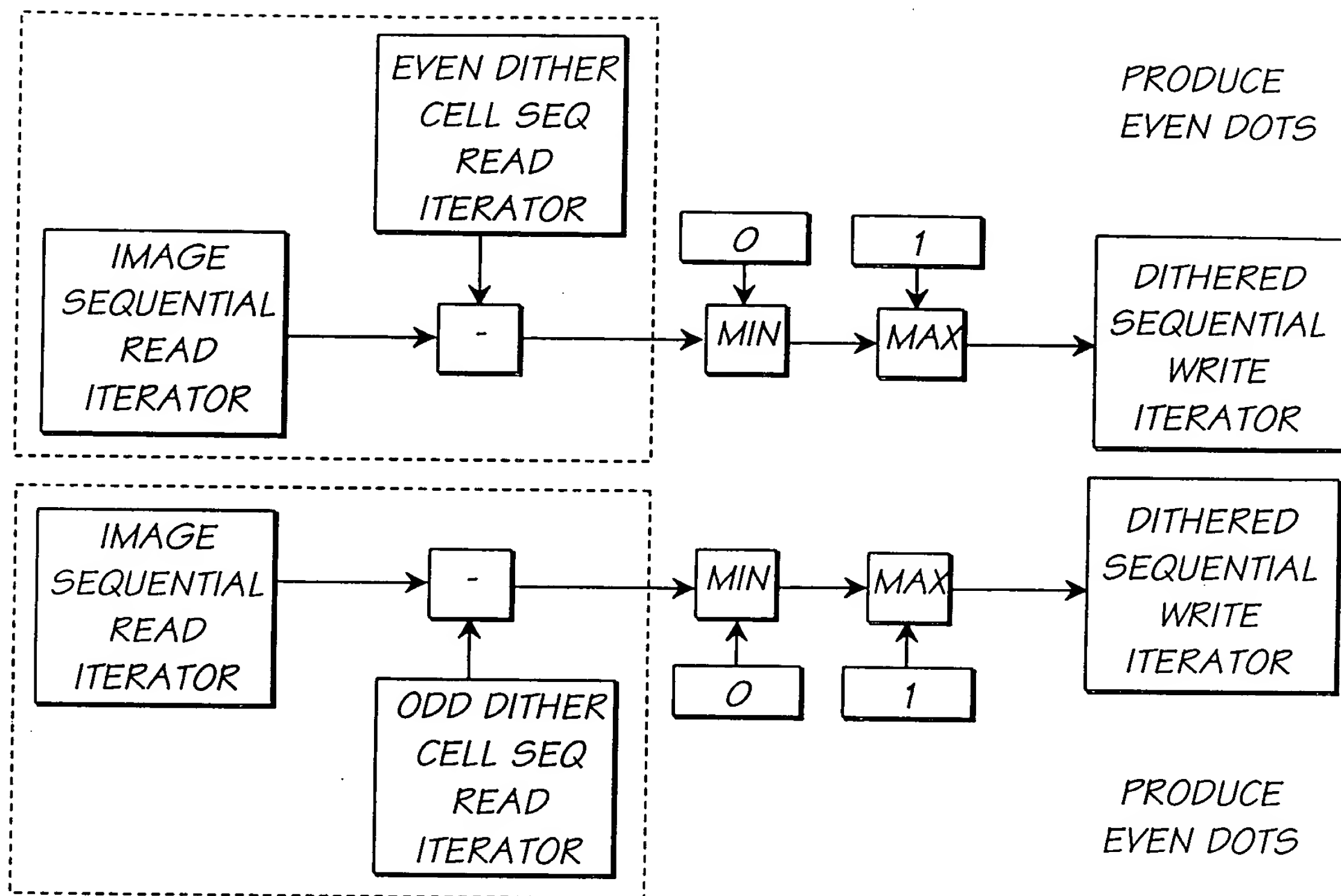


FIG. 157

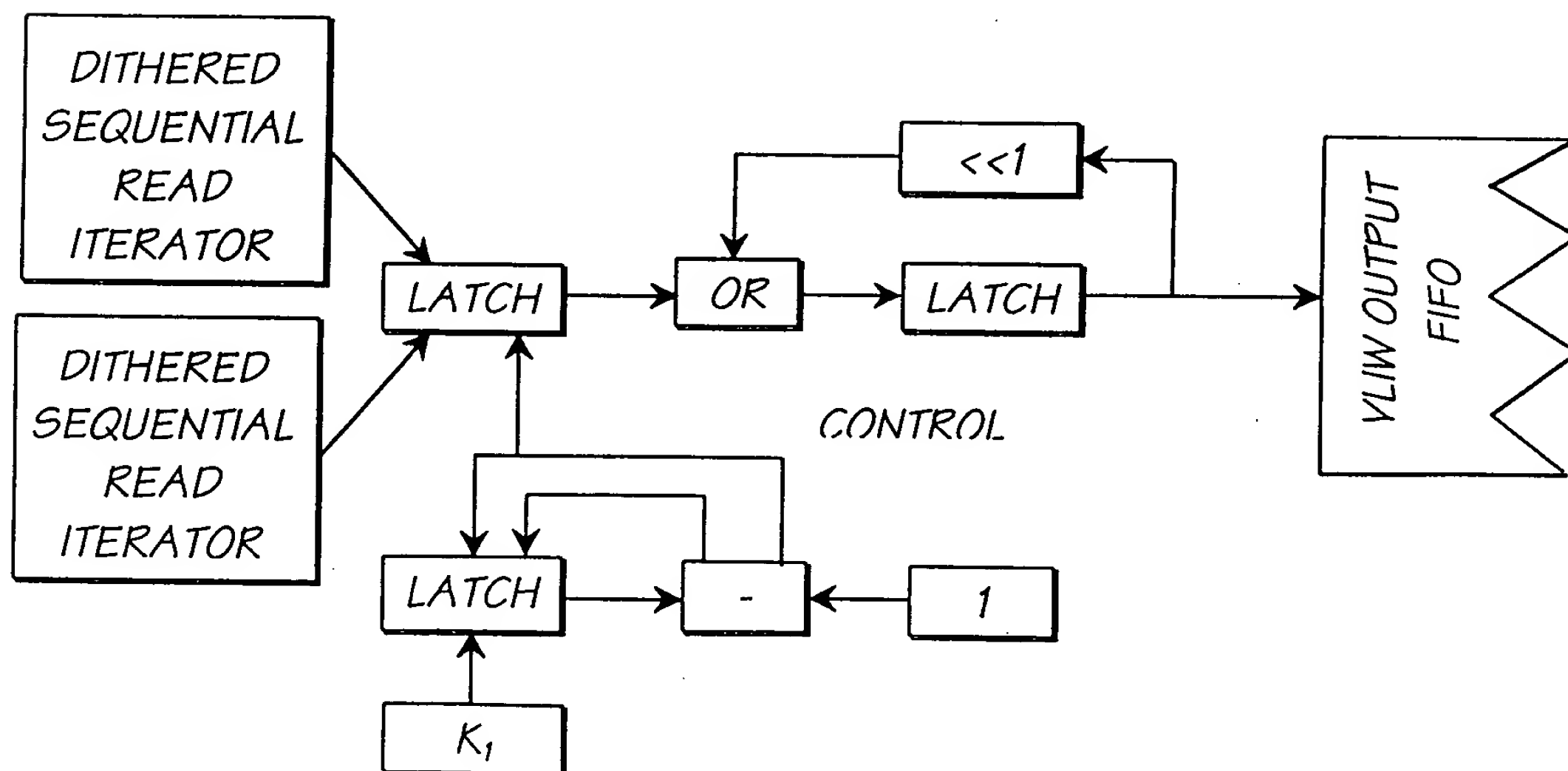


FIG. 158

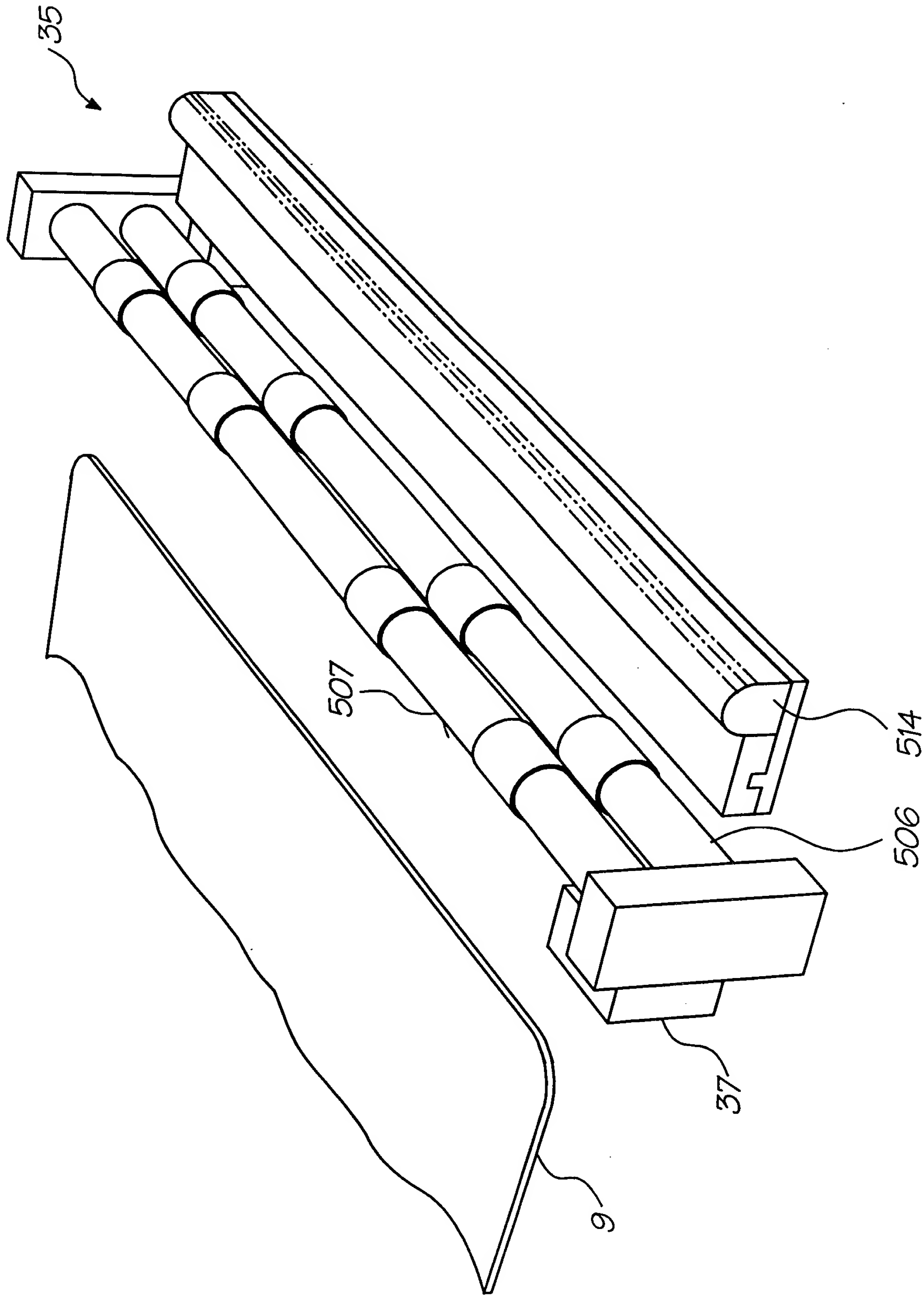


FIG. 159

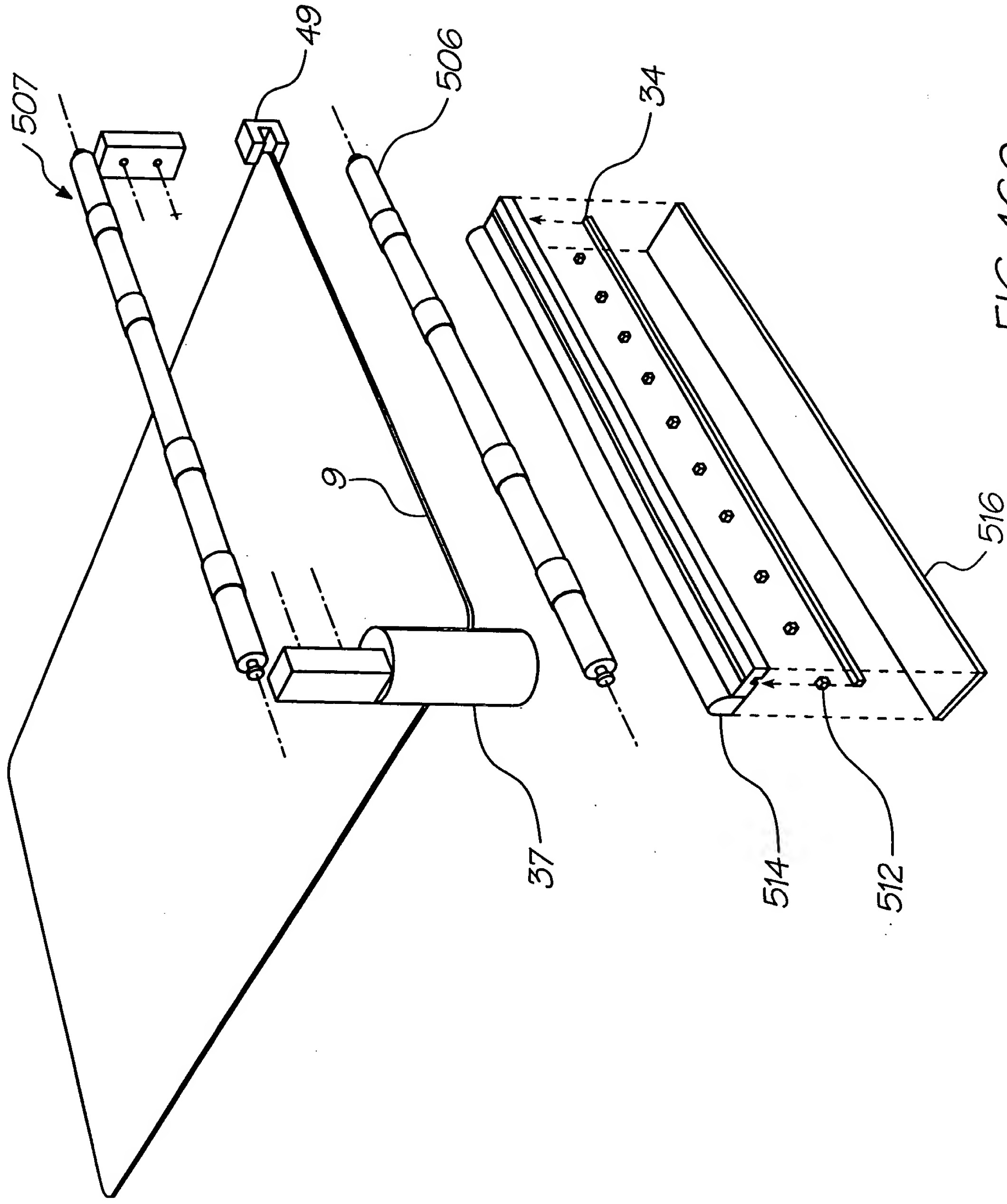


FIG. 160



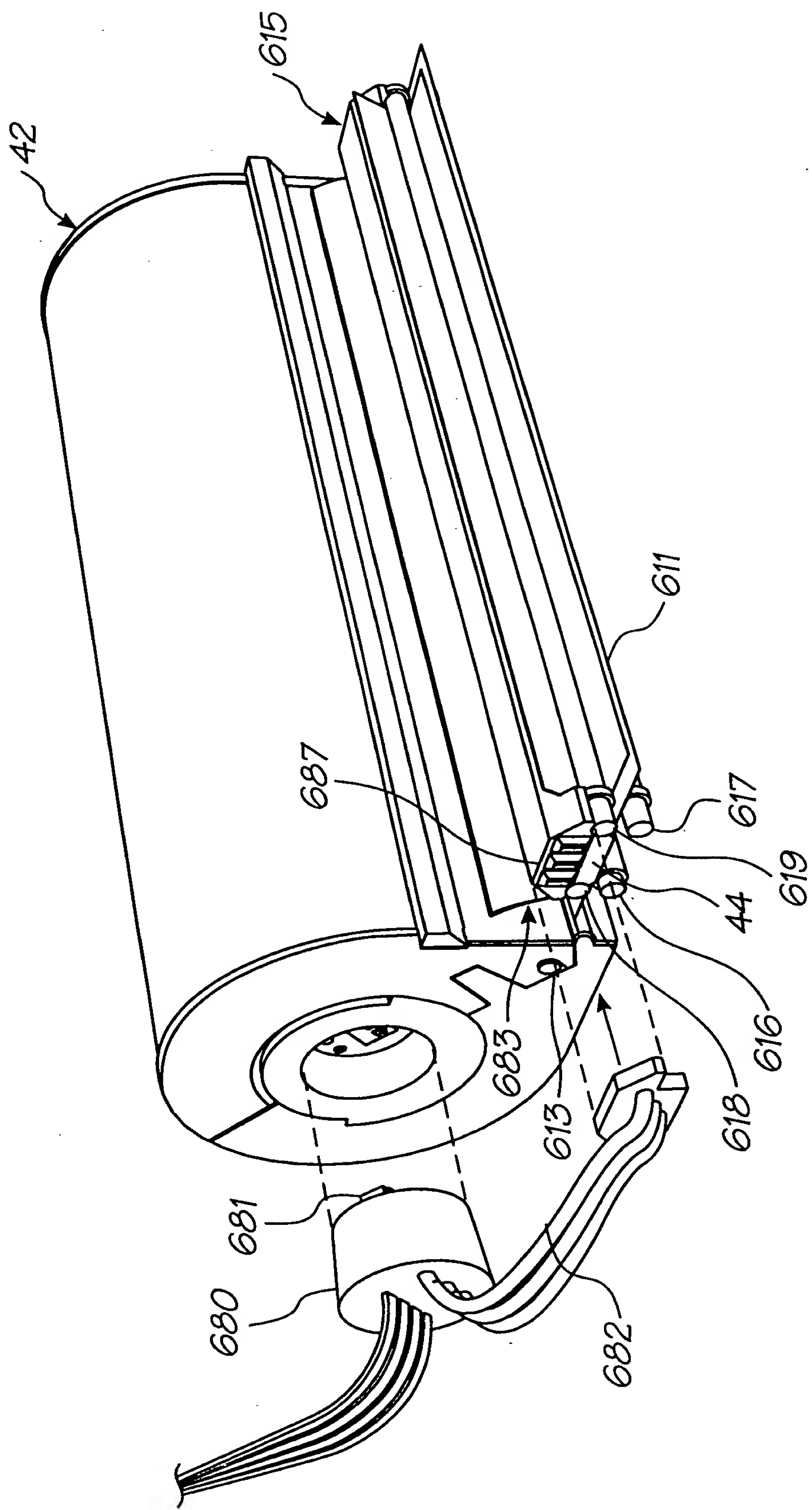


FIG. 162

FIG. 163

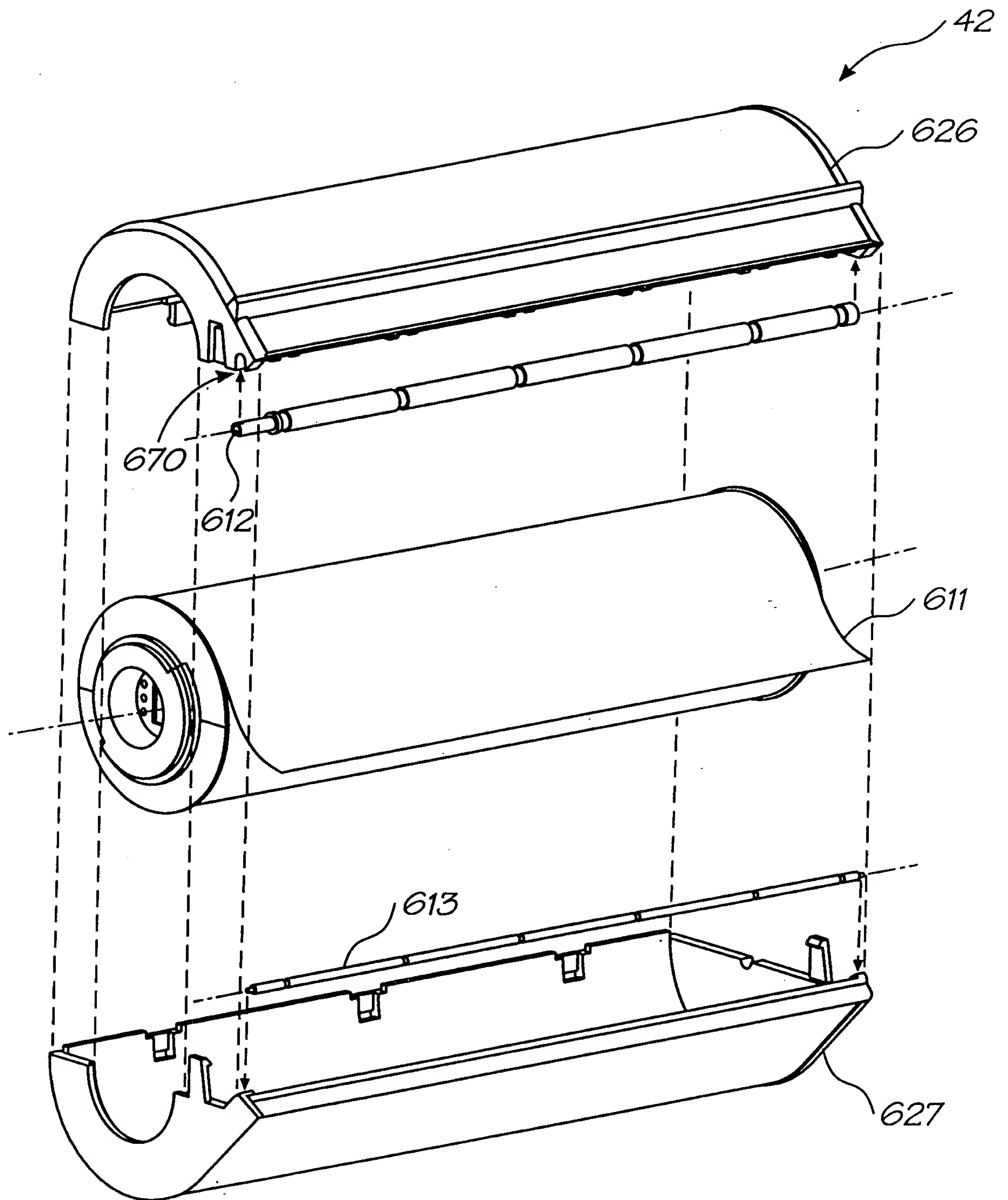


FIG. 163

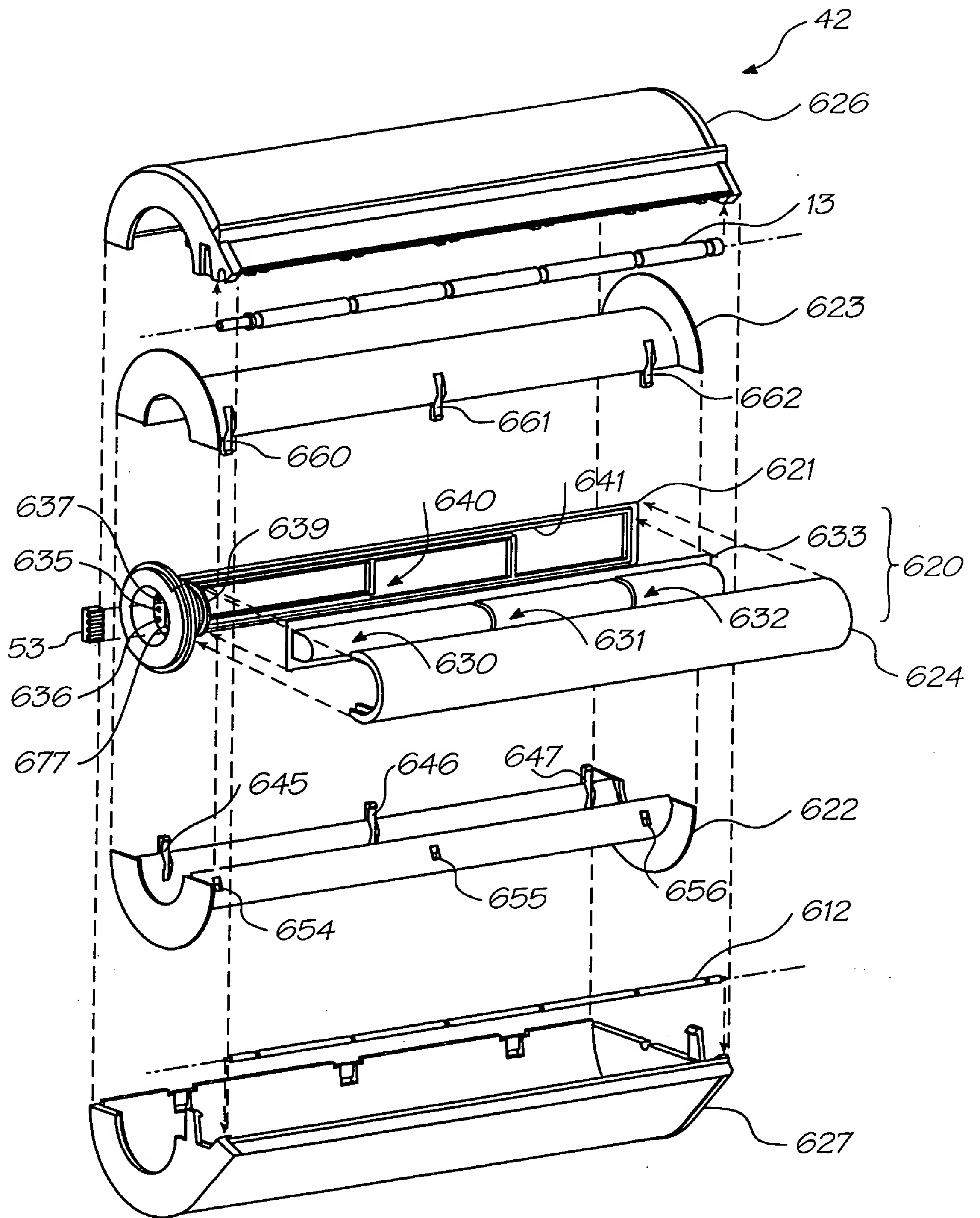


FIG. 164



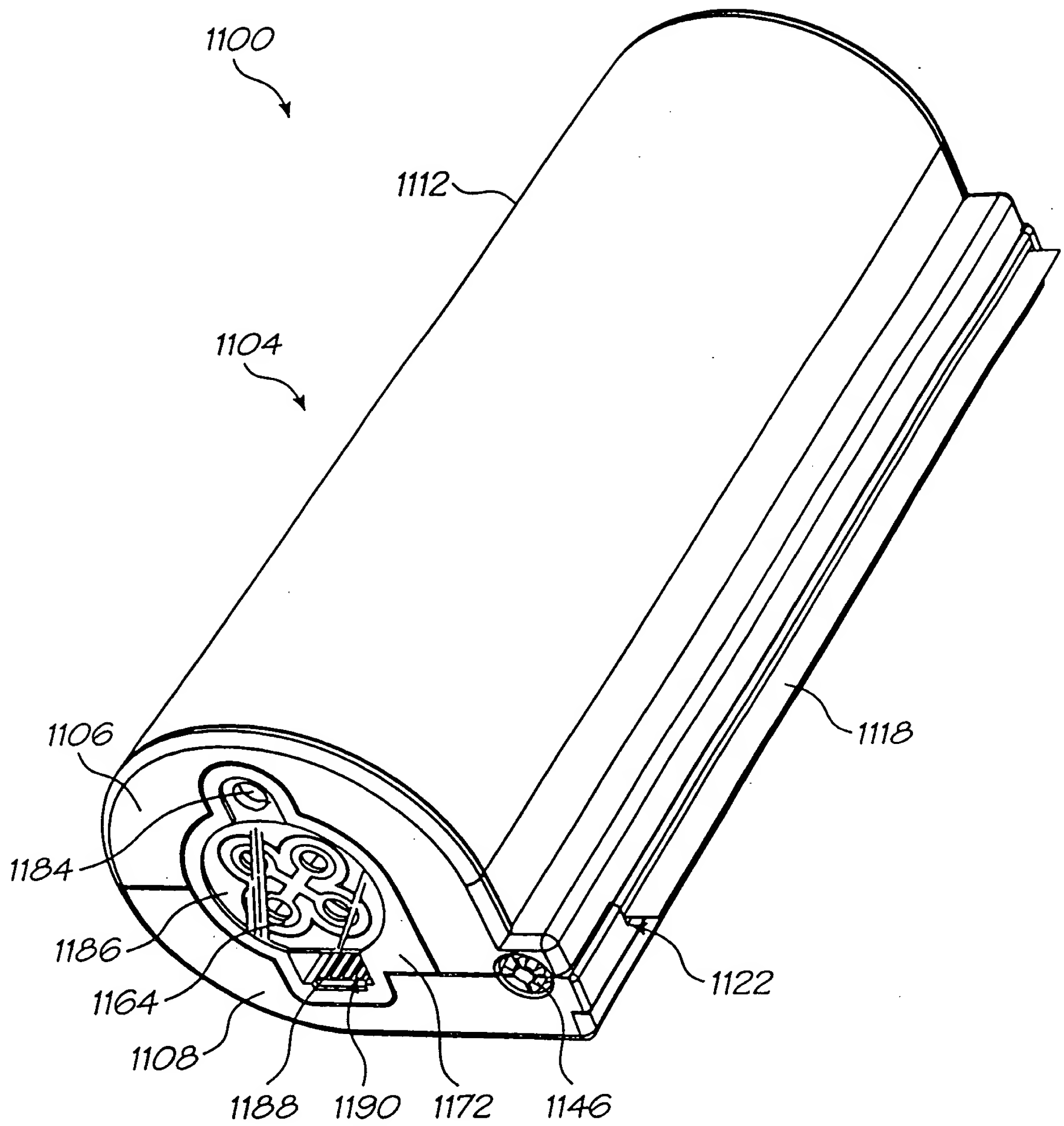


FIG. 164A

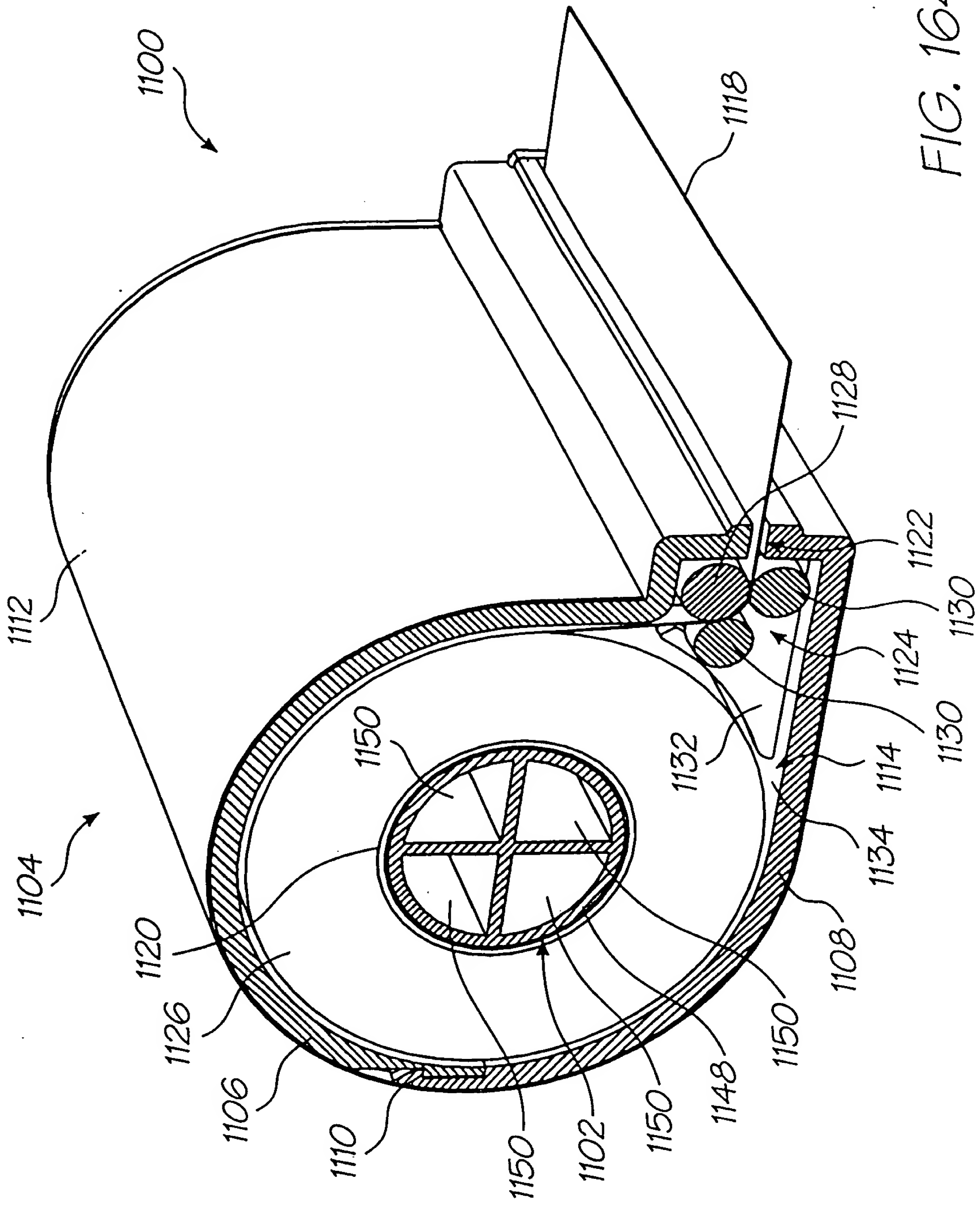


FIG. 164B

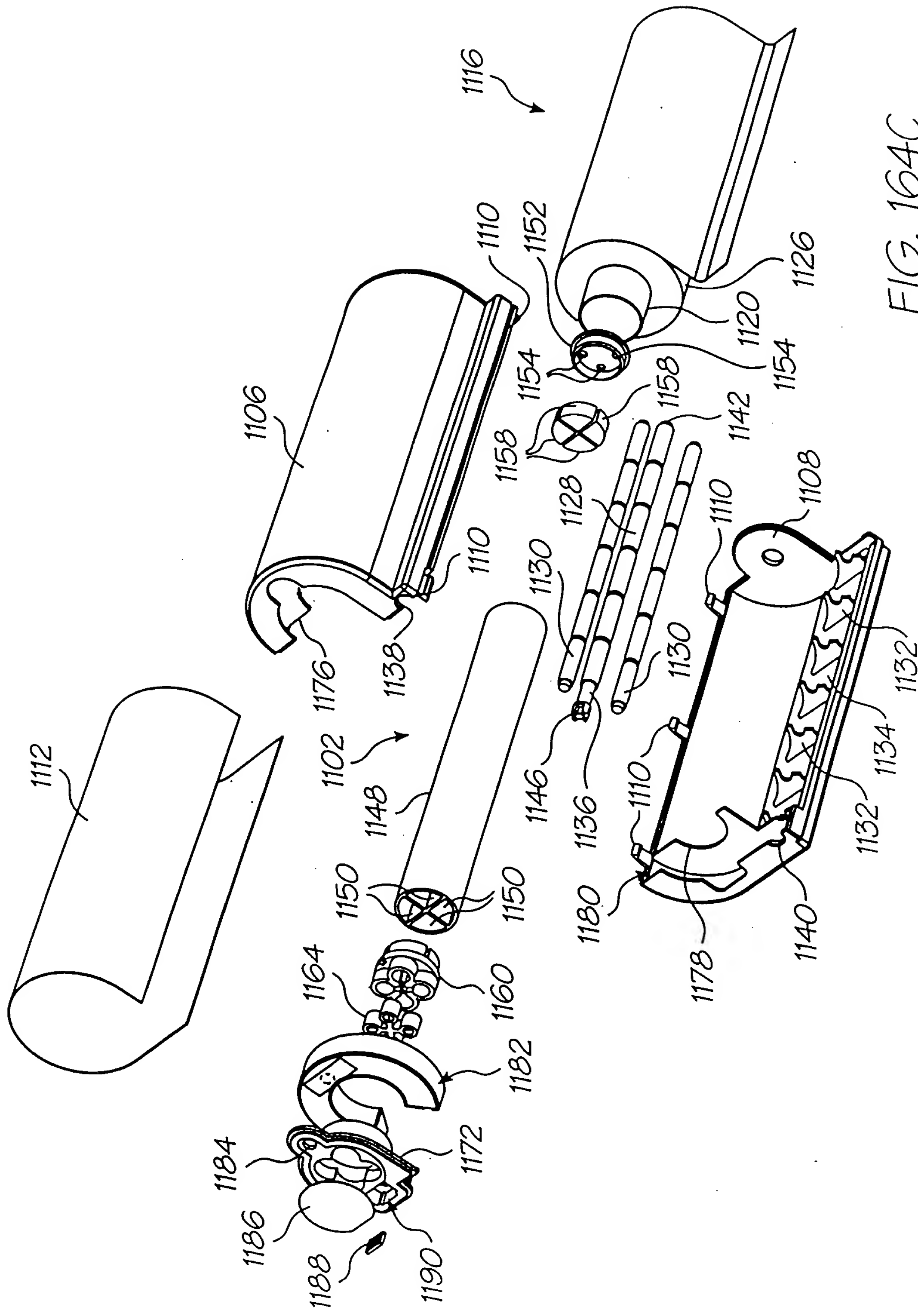


FIG. 164C

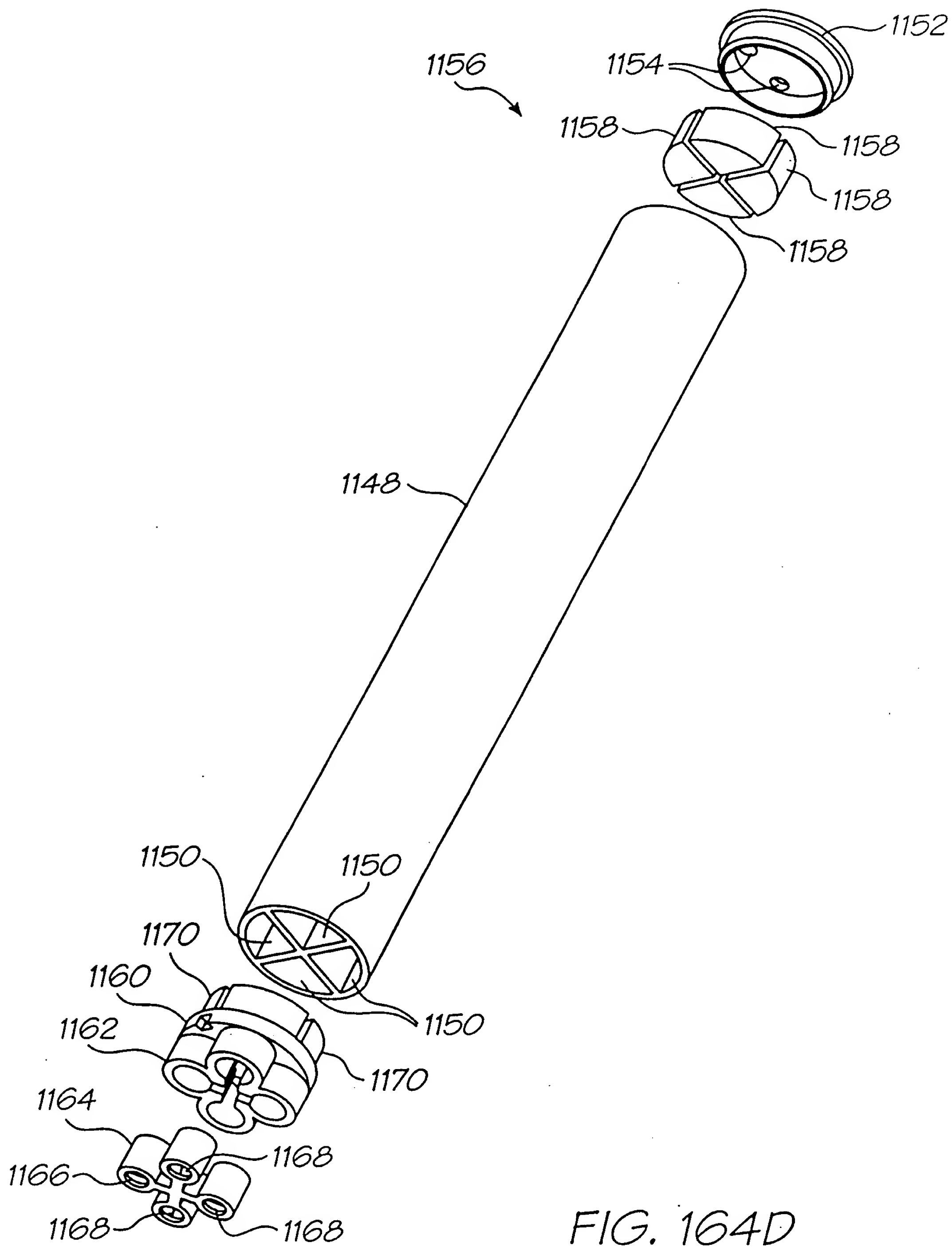


FIG. 164D

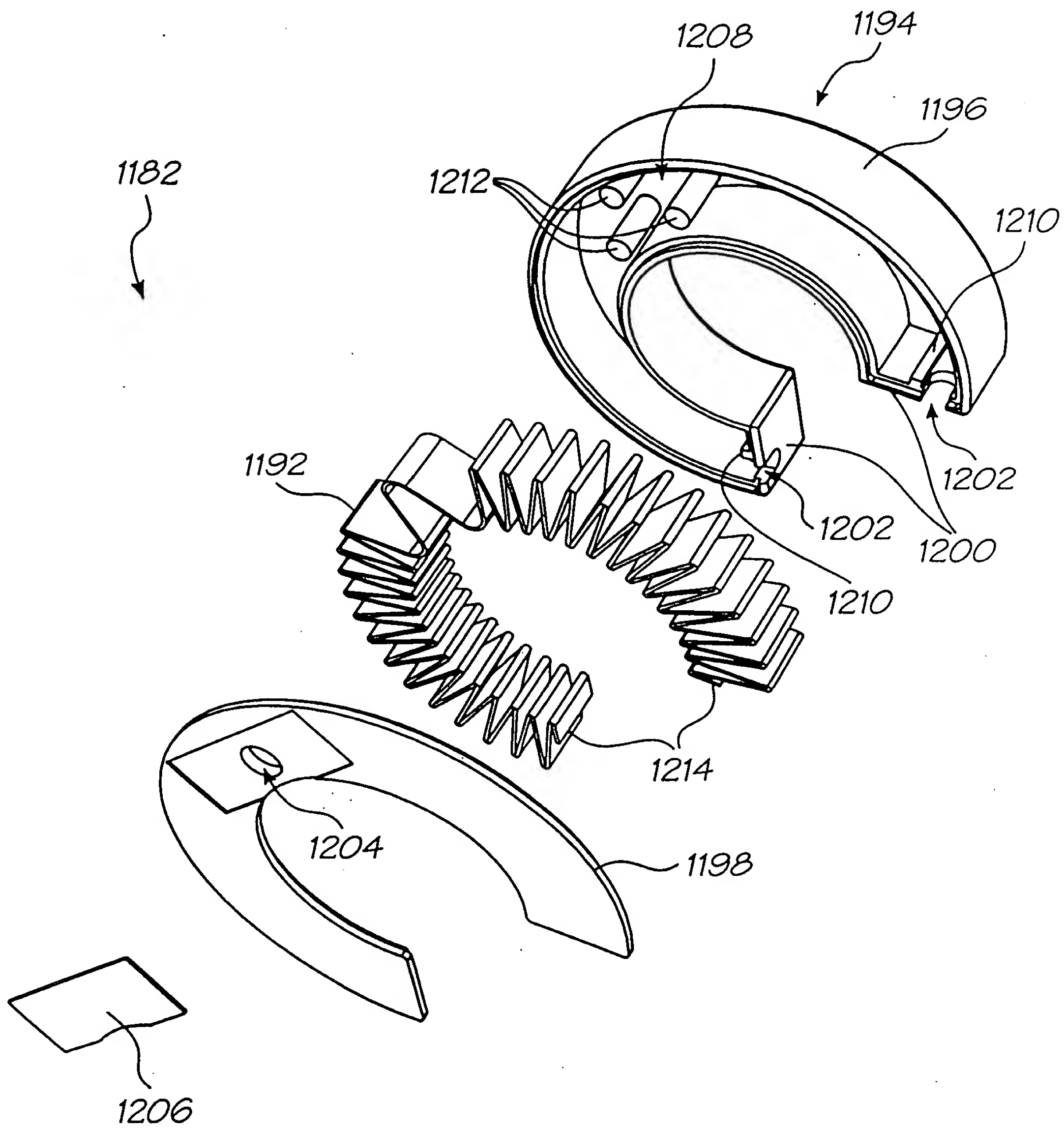


FIG. 164E

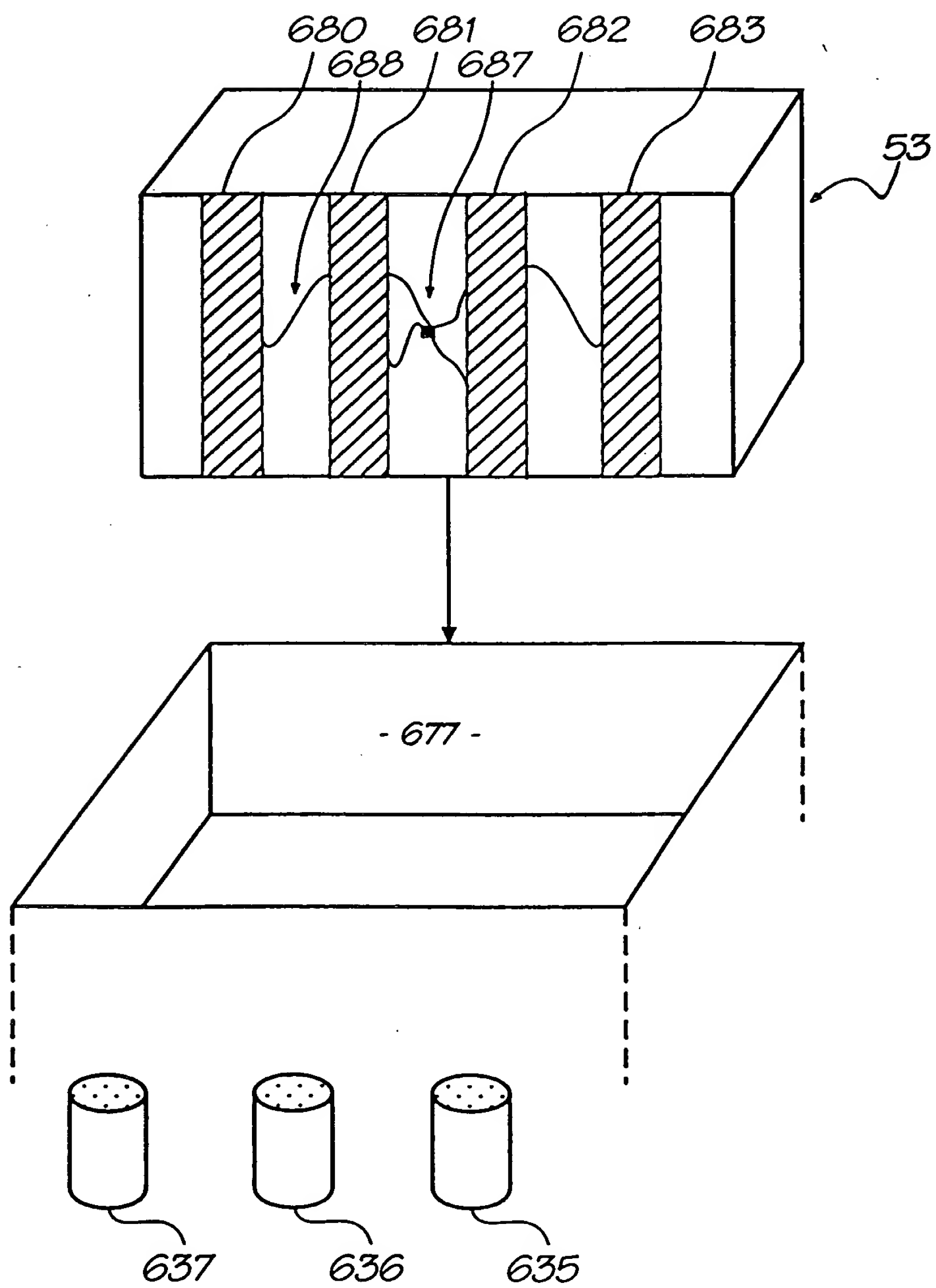


FIG. 165

FIG. 166

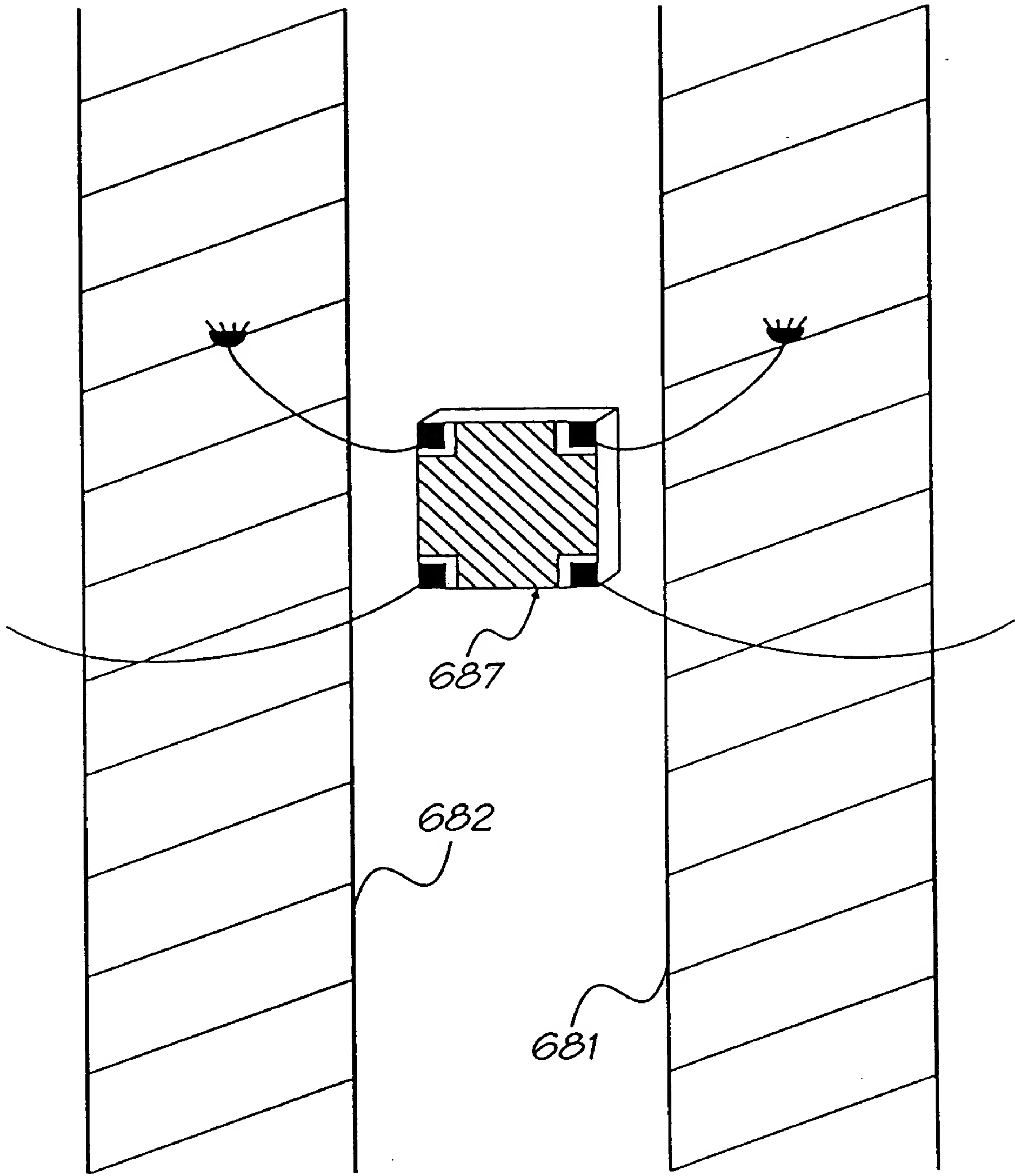


FIG. 166

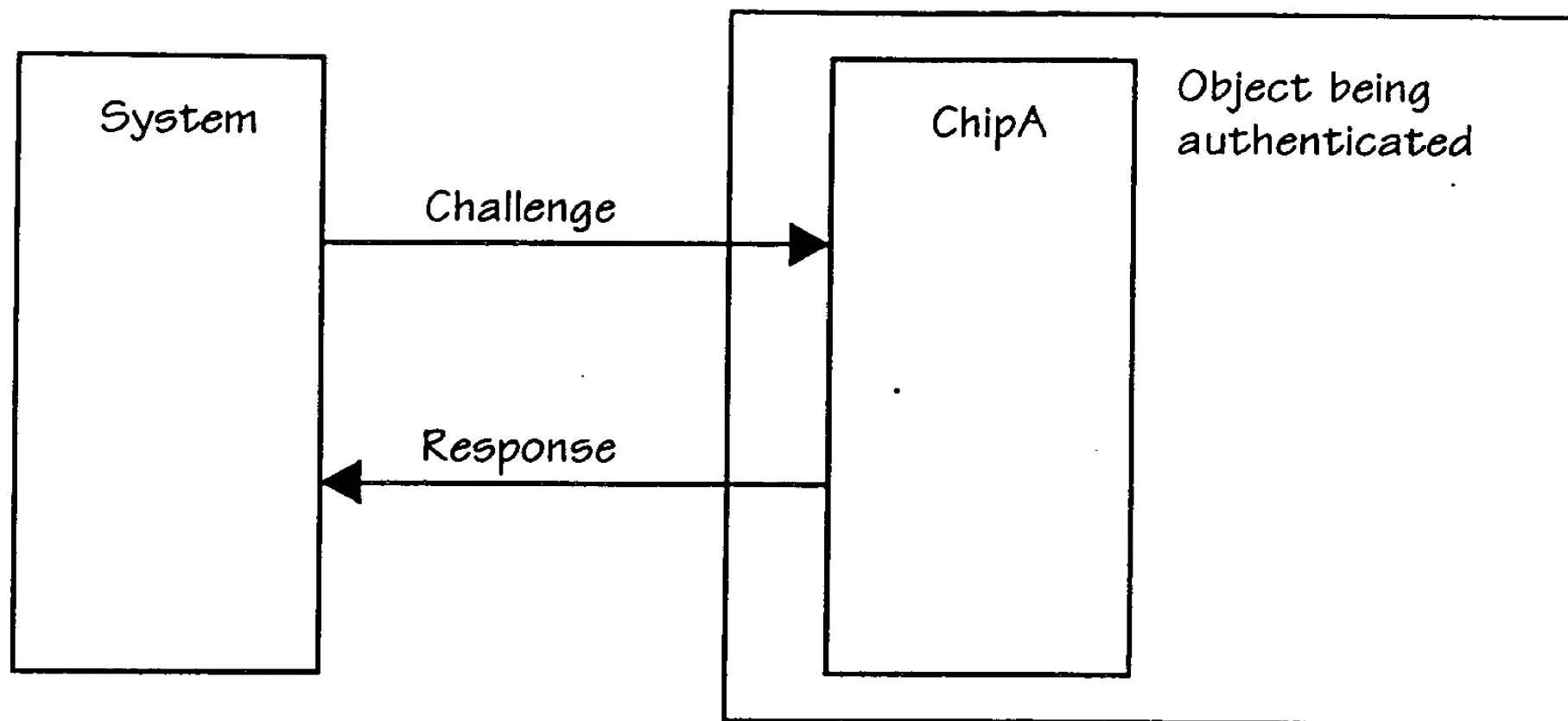


FIG. 167

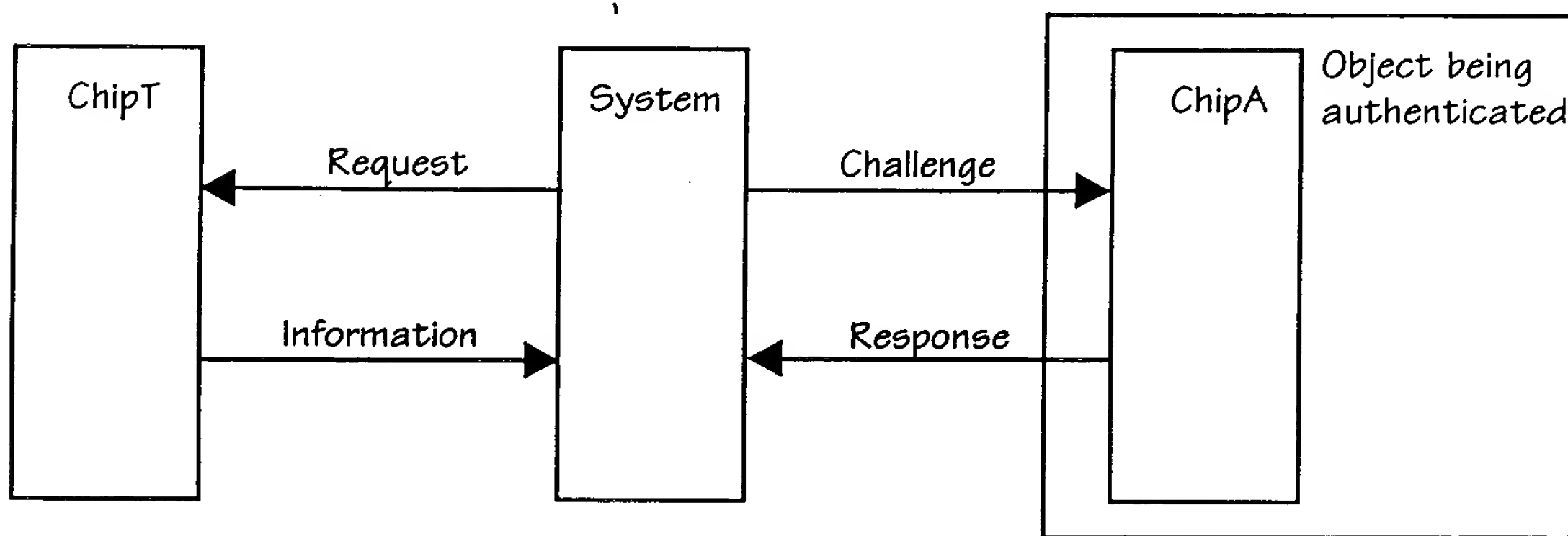


FIG. 168



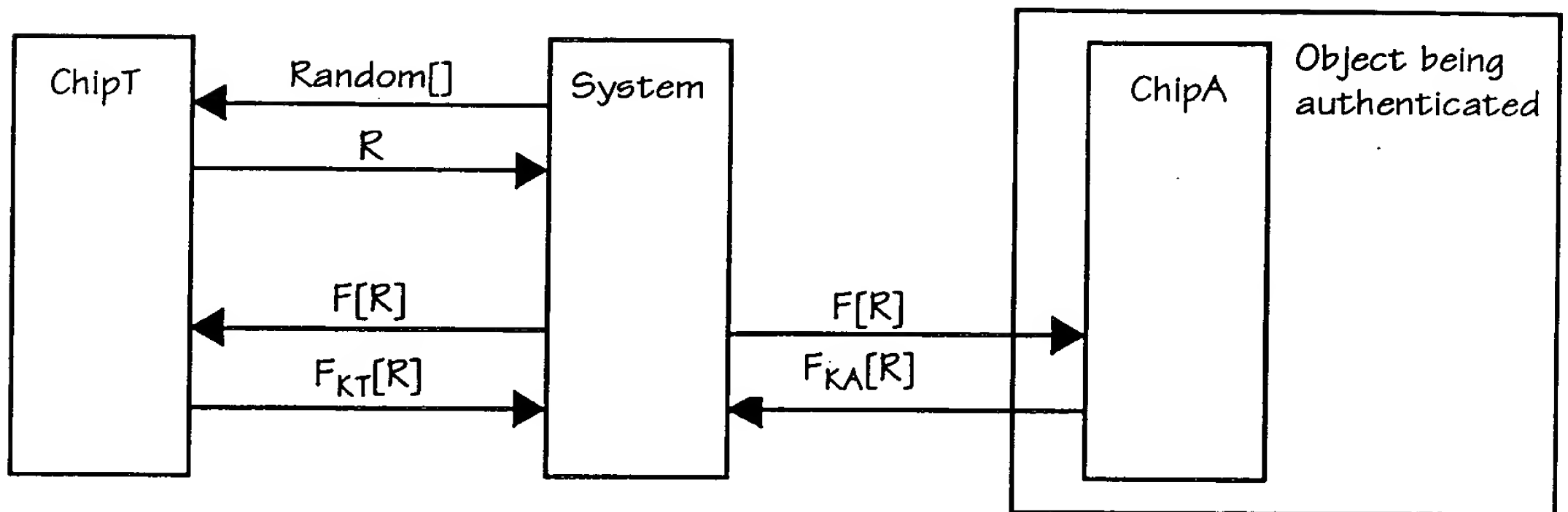


FIG. 169

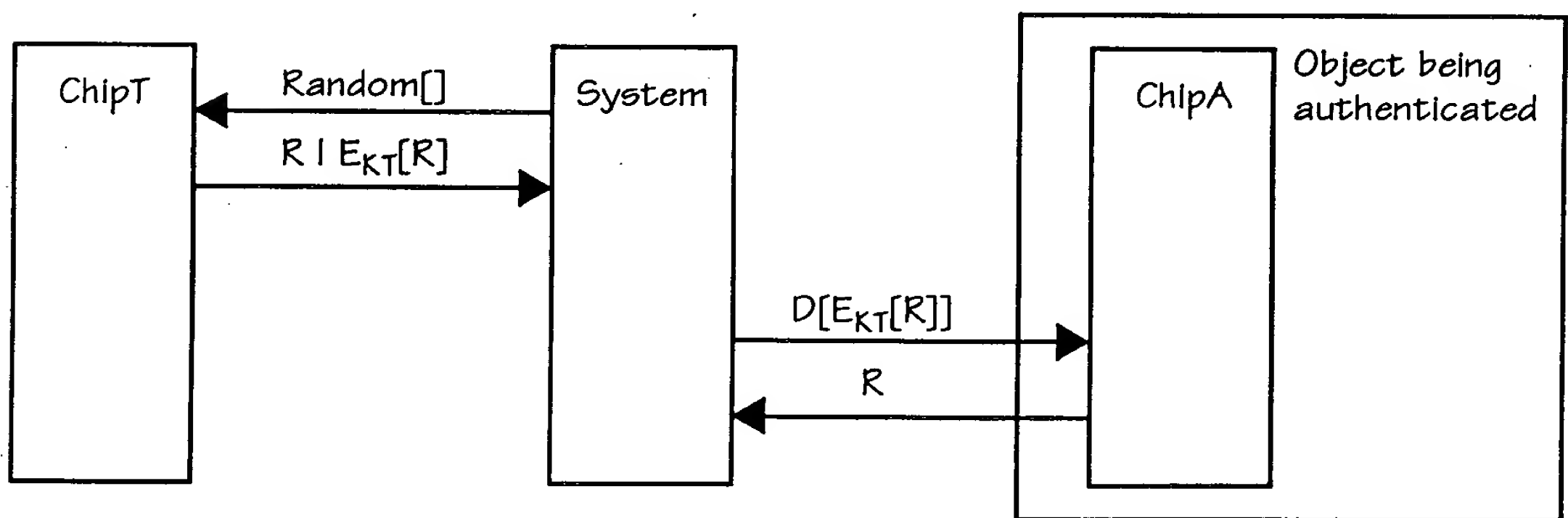


FIG. 170

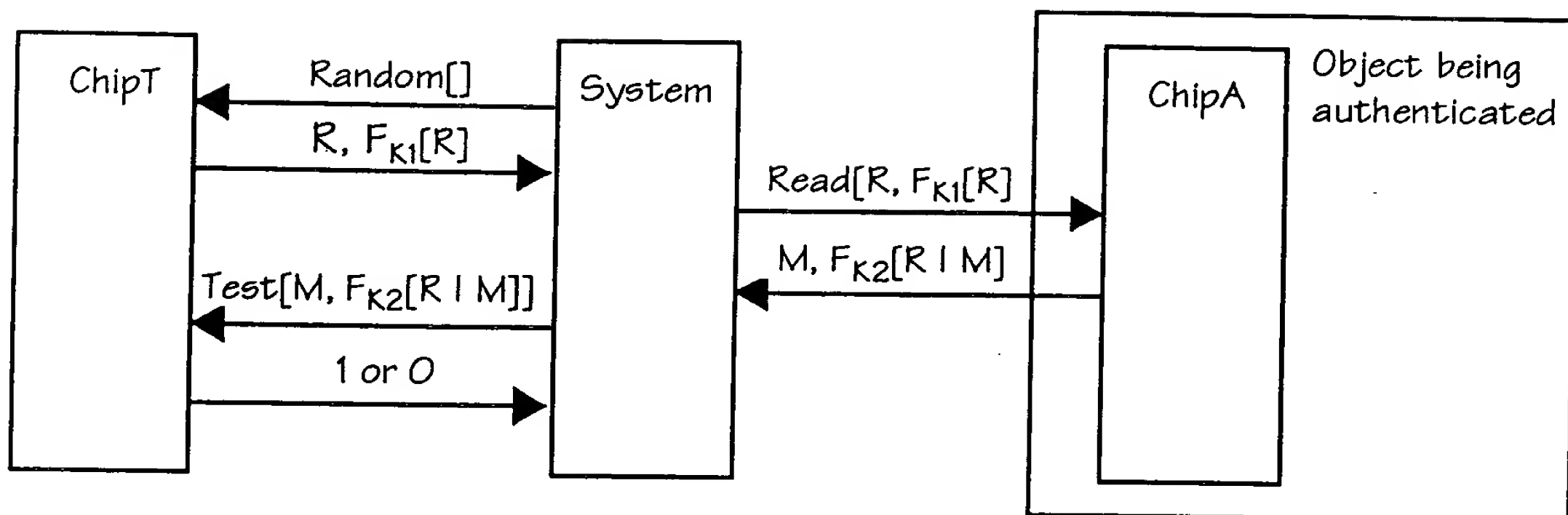


FIG. 171

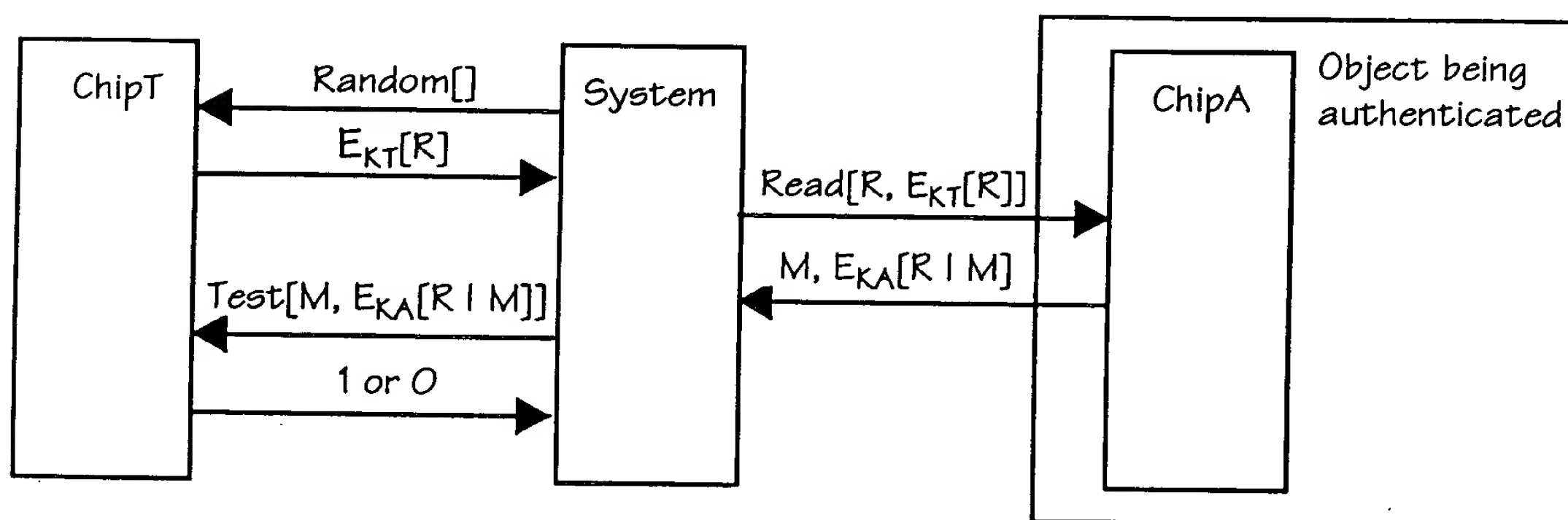


FIG. 172

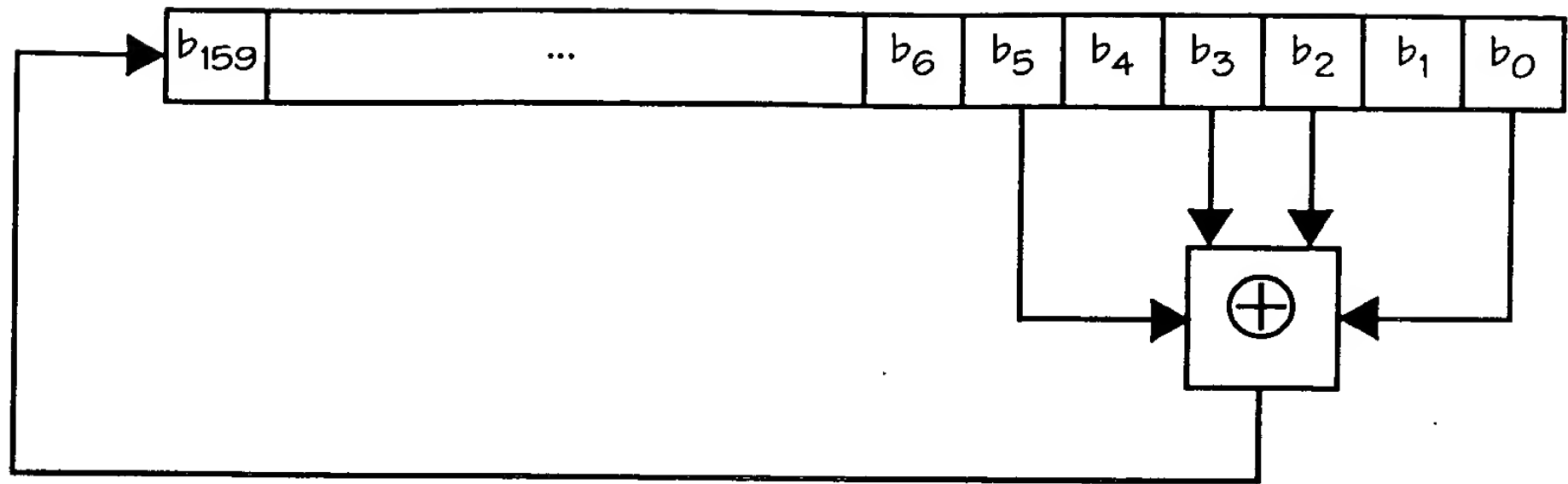


FIG. 173

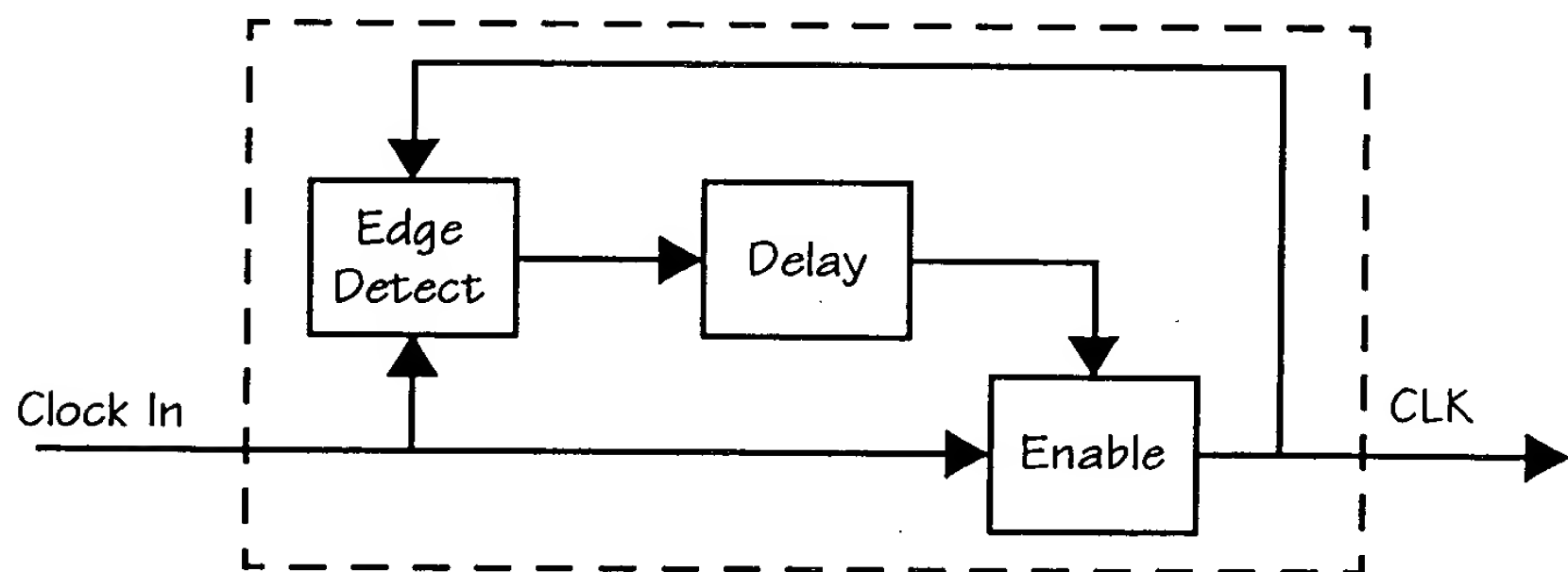


FIG. 174

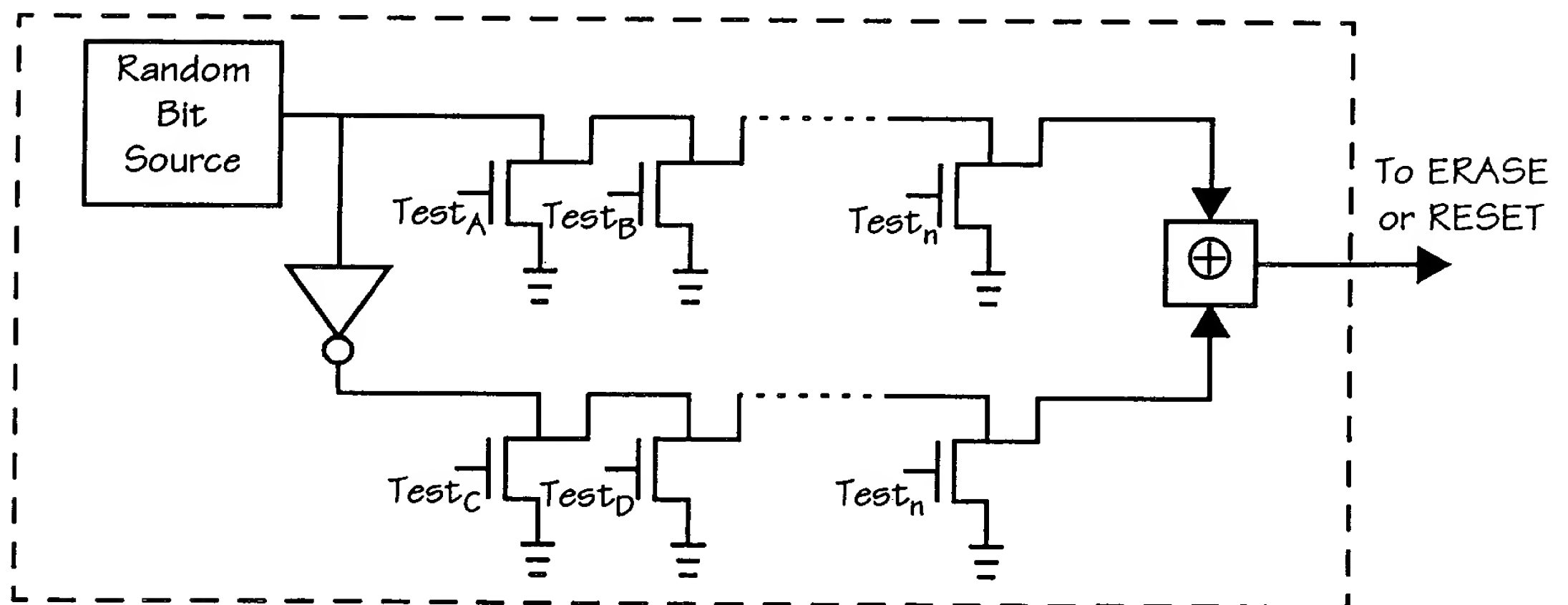


FIG. 175

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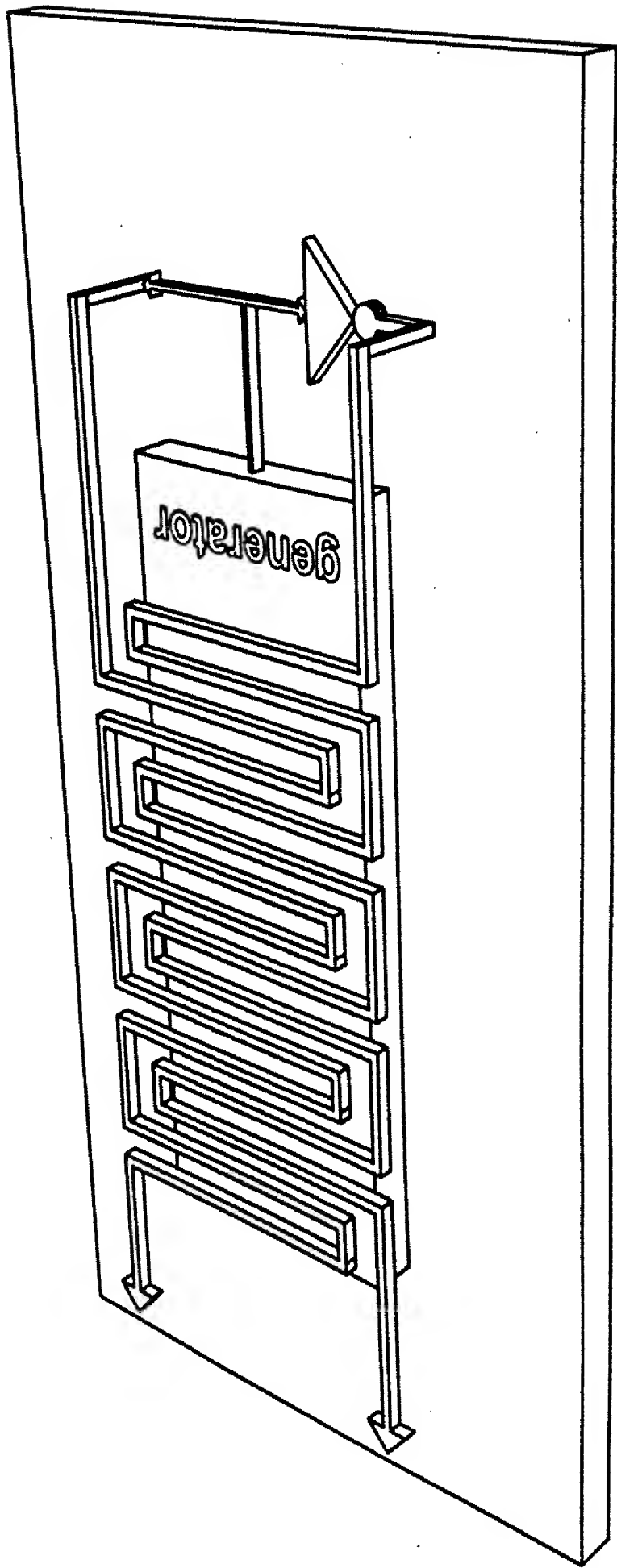


FIG. 178

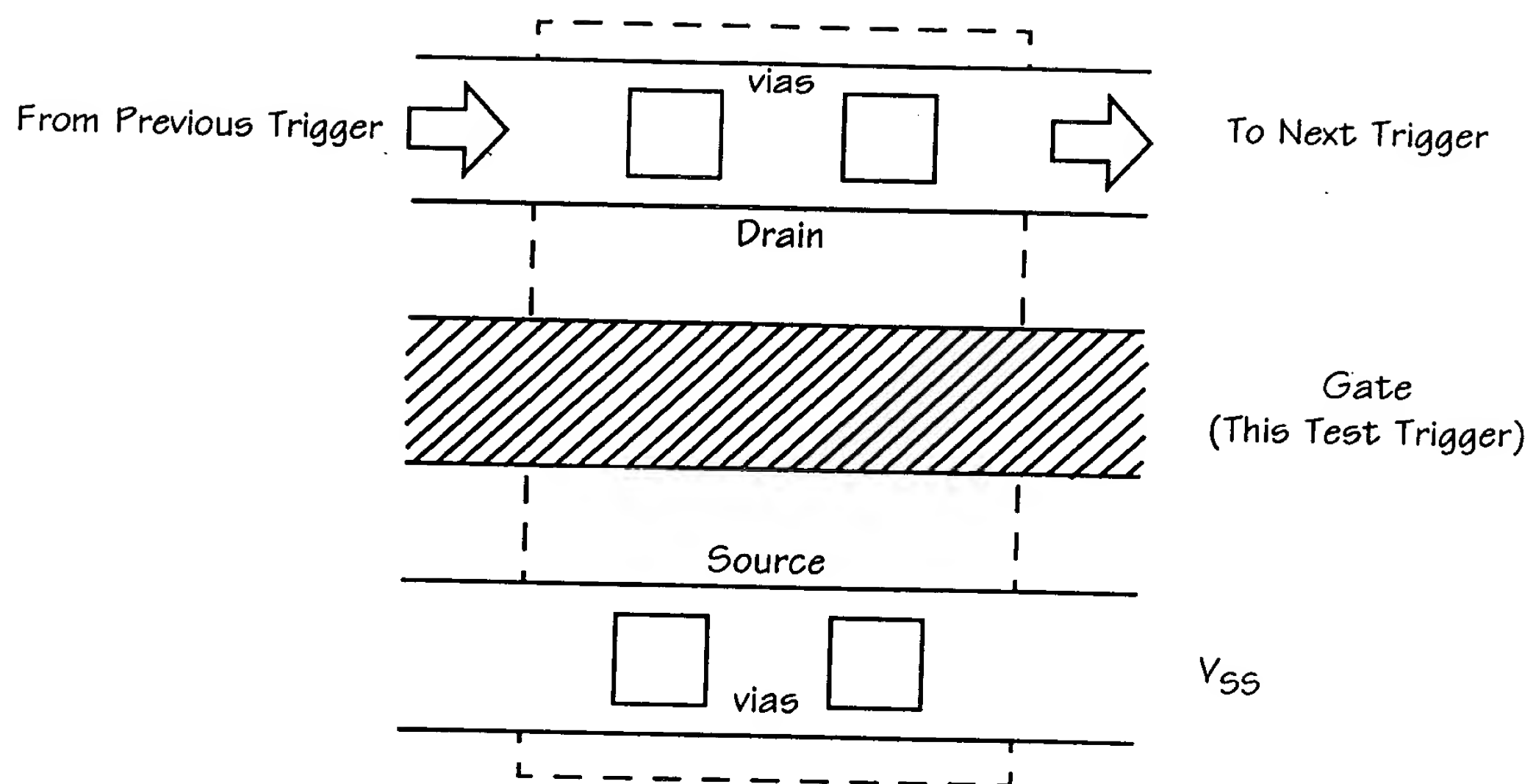


FIG. 176

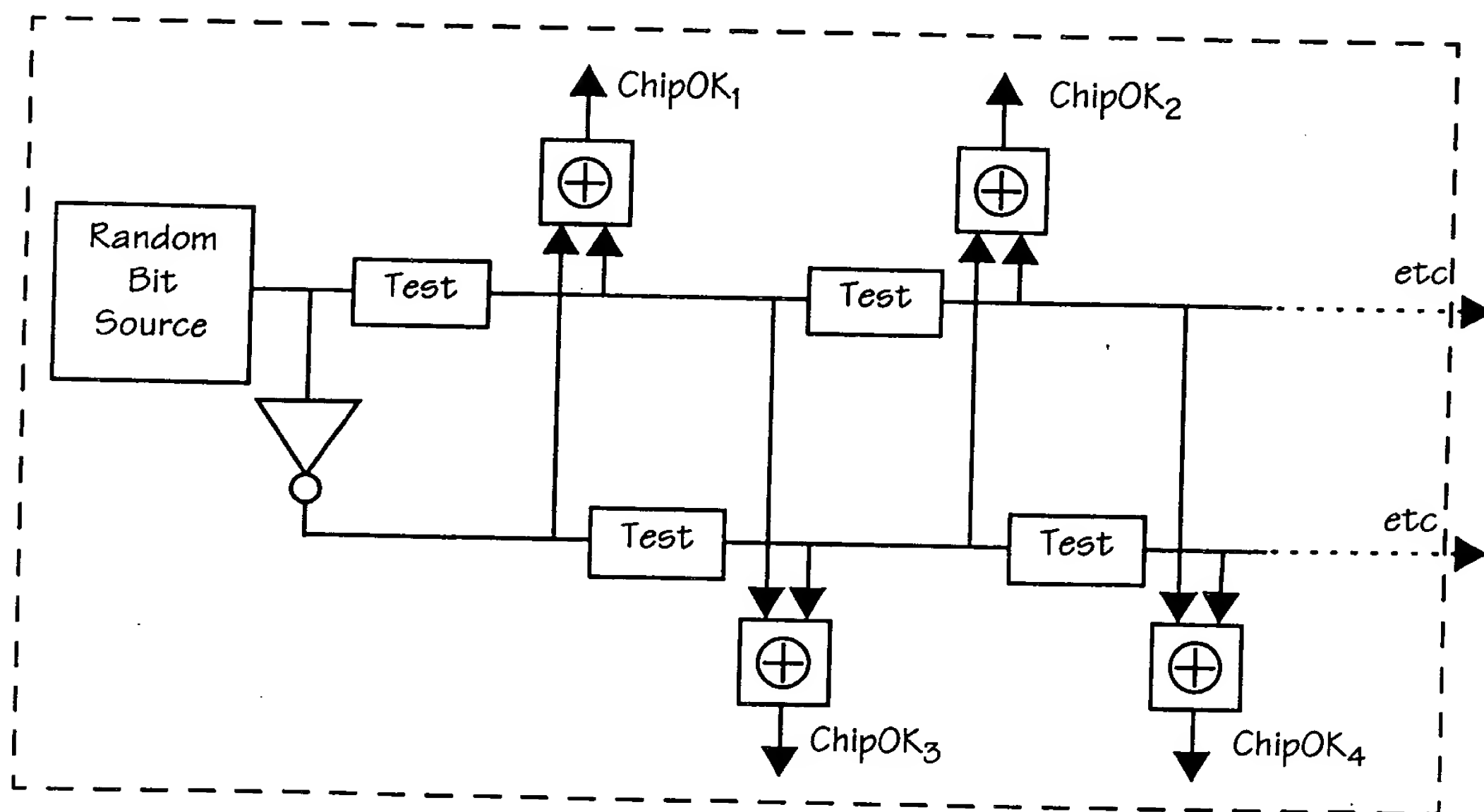
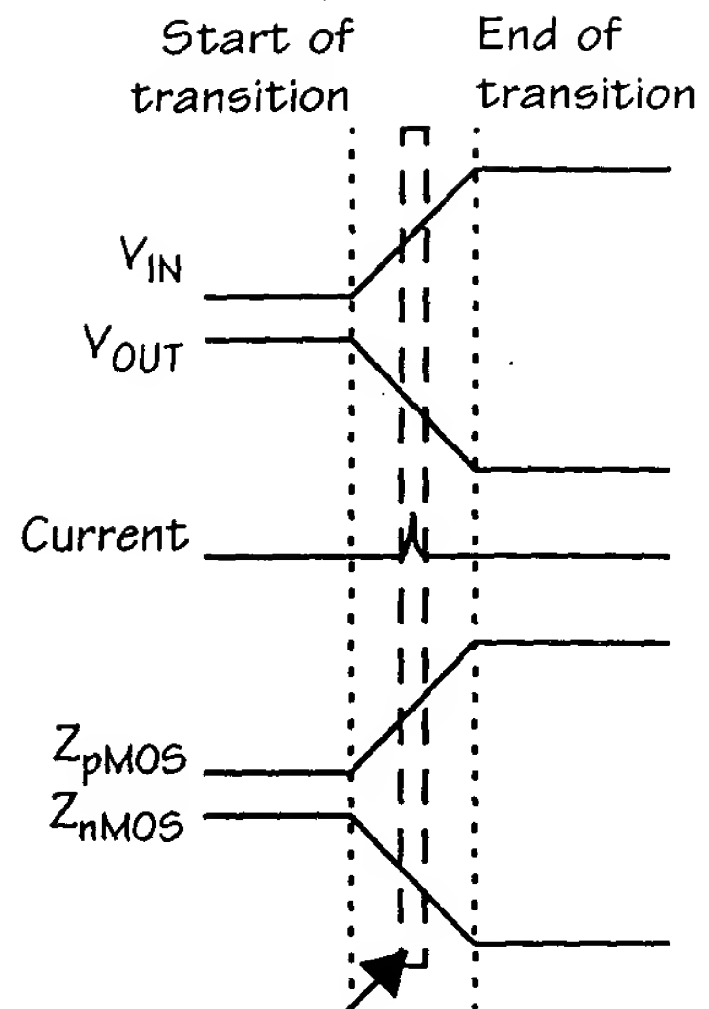
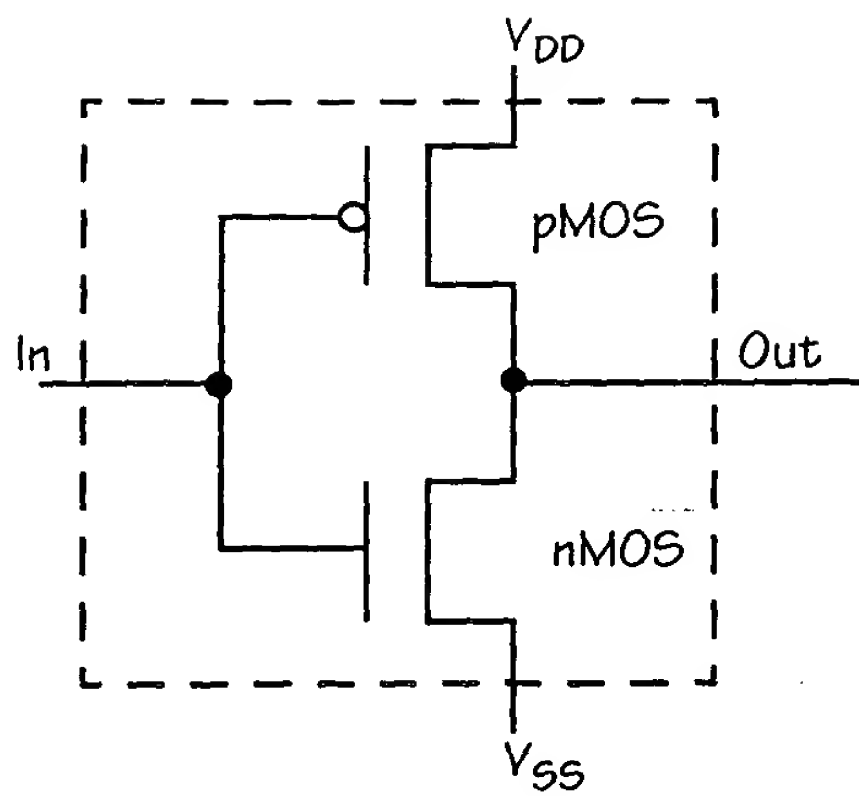


FIG. 177



Both intermediate impedance  
= power-GND short circuit

FIG. 179

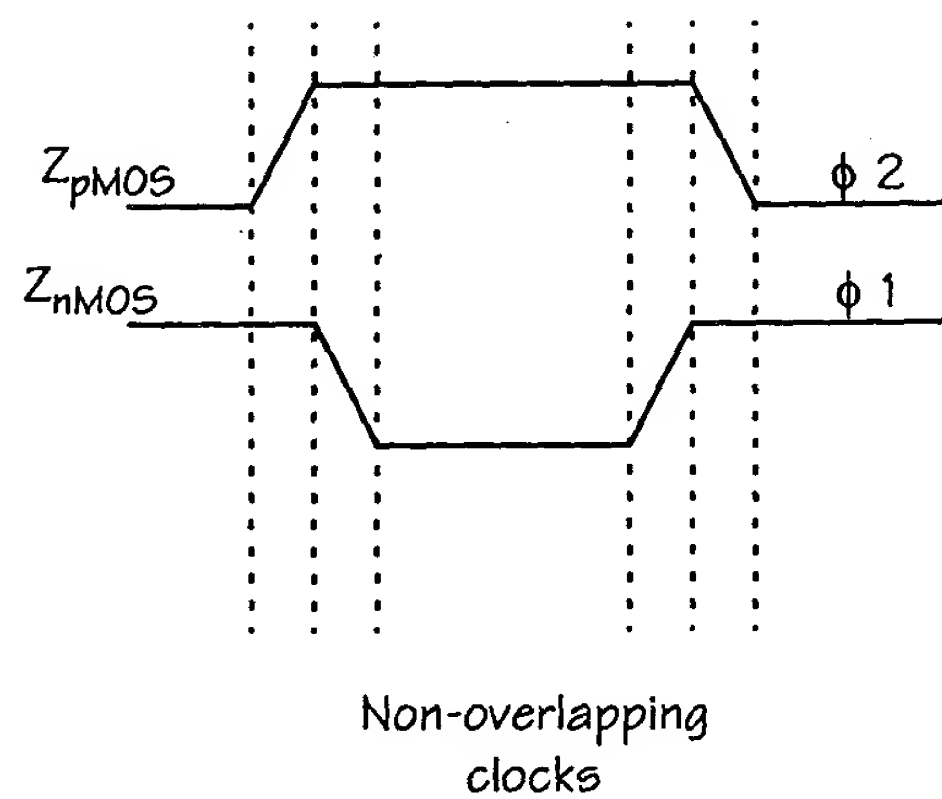
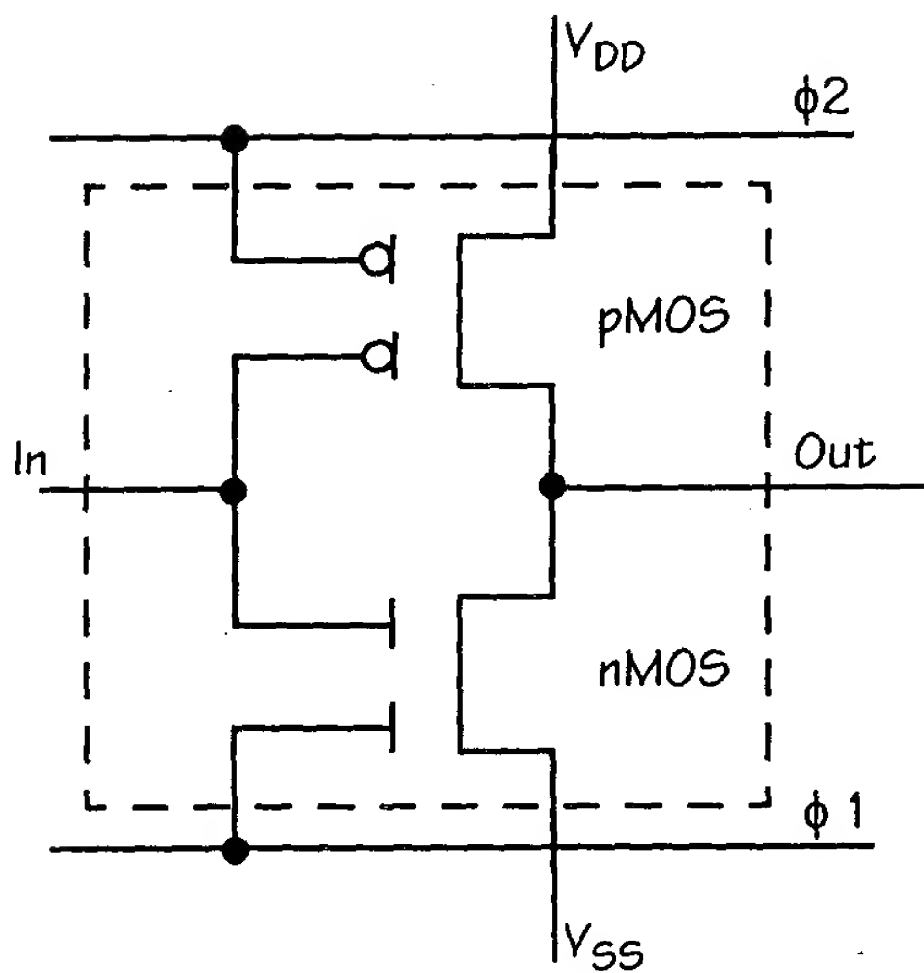


FIG. 180

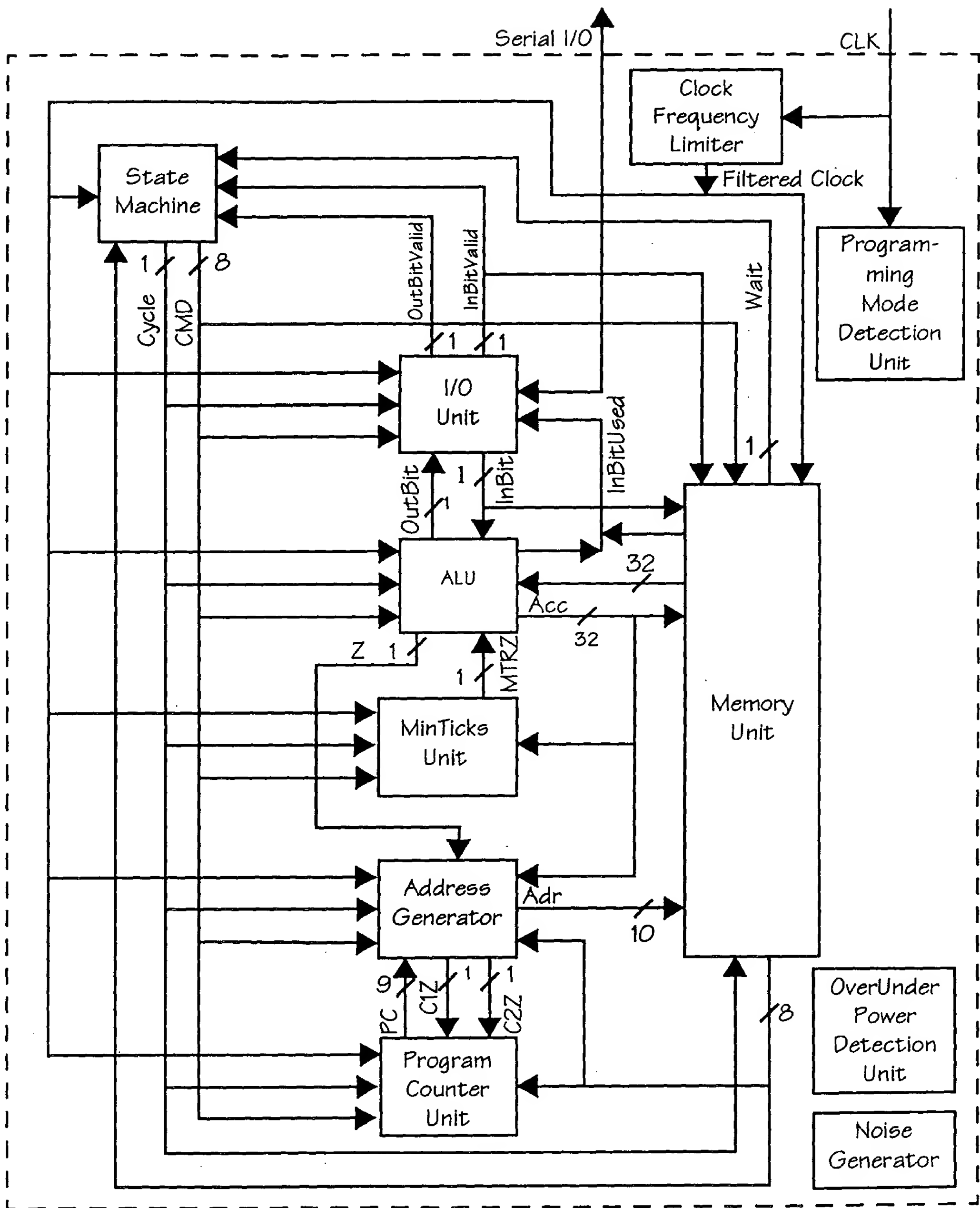


FIG. 181

FIG. 182

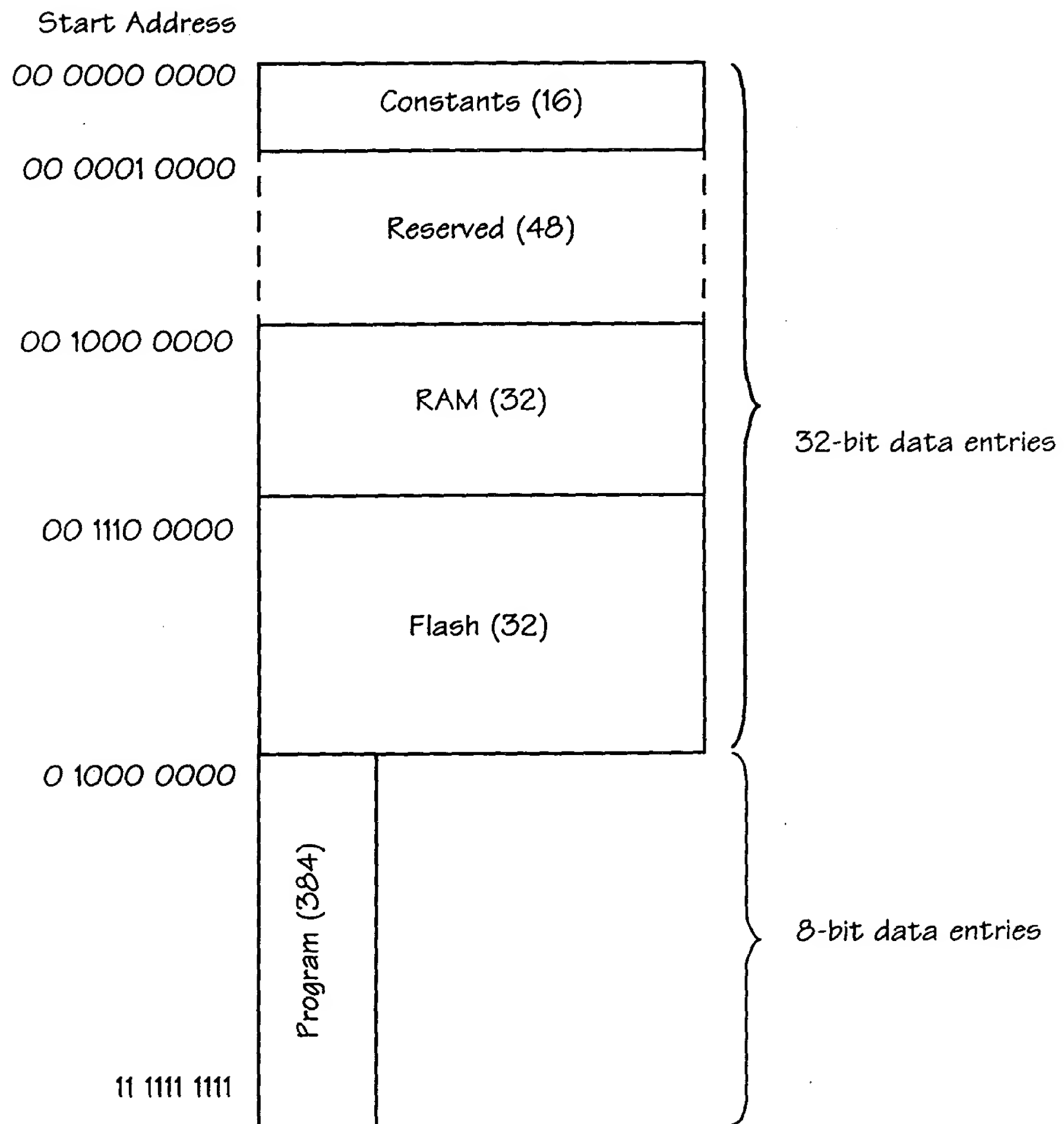


FIG. 182





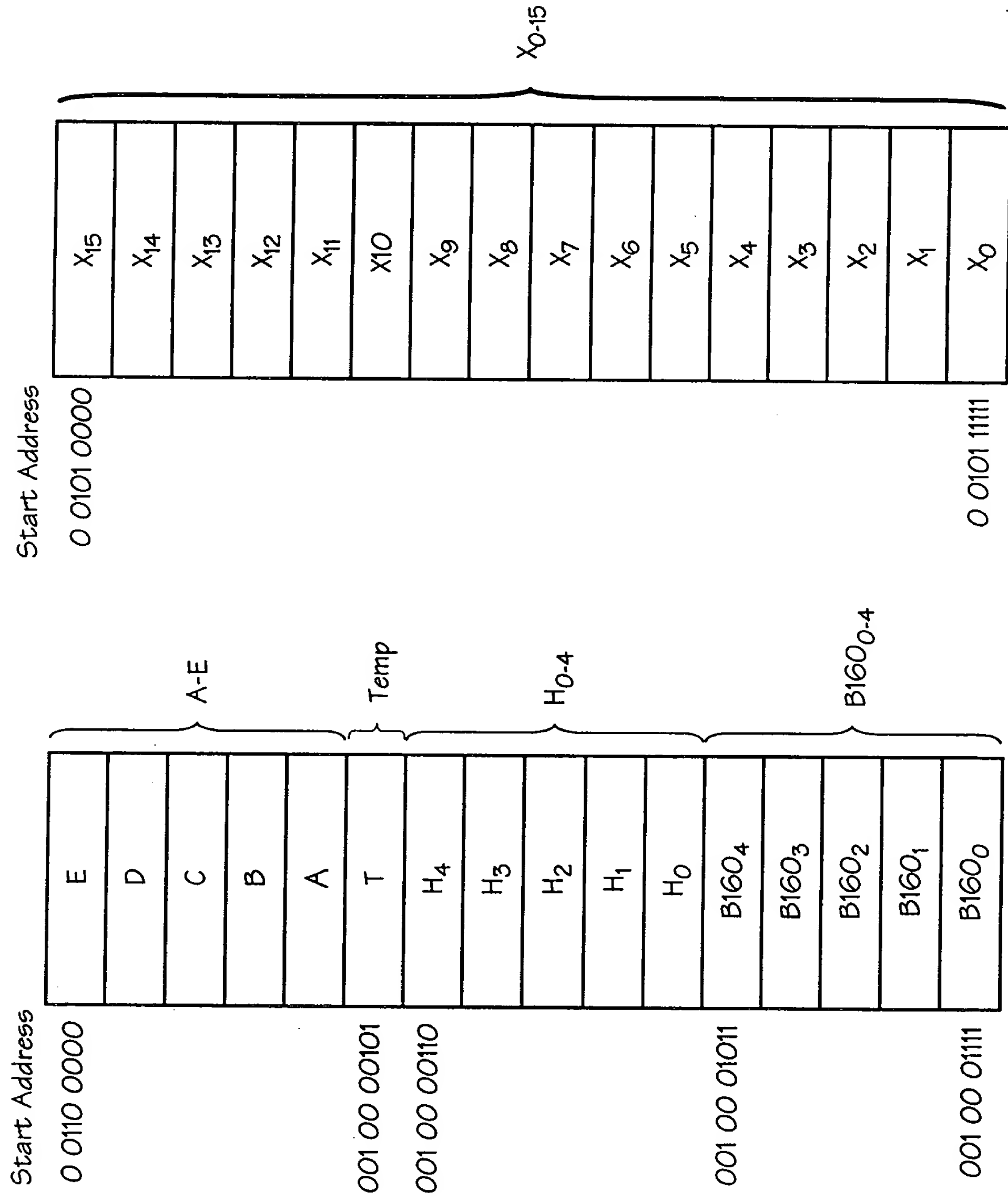


FIG. 184

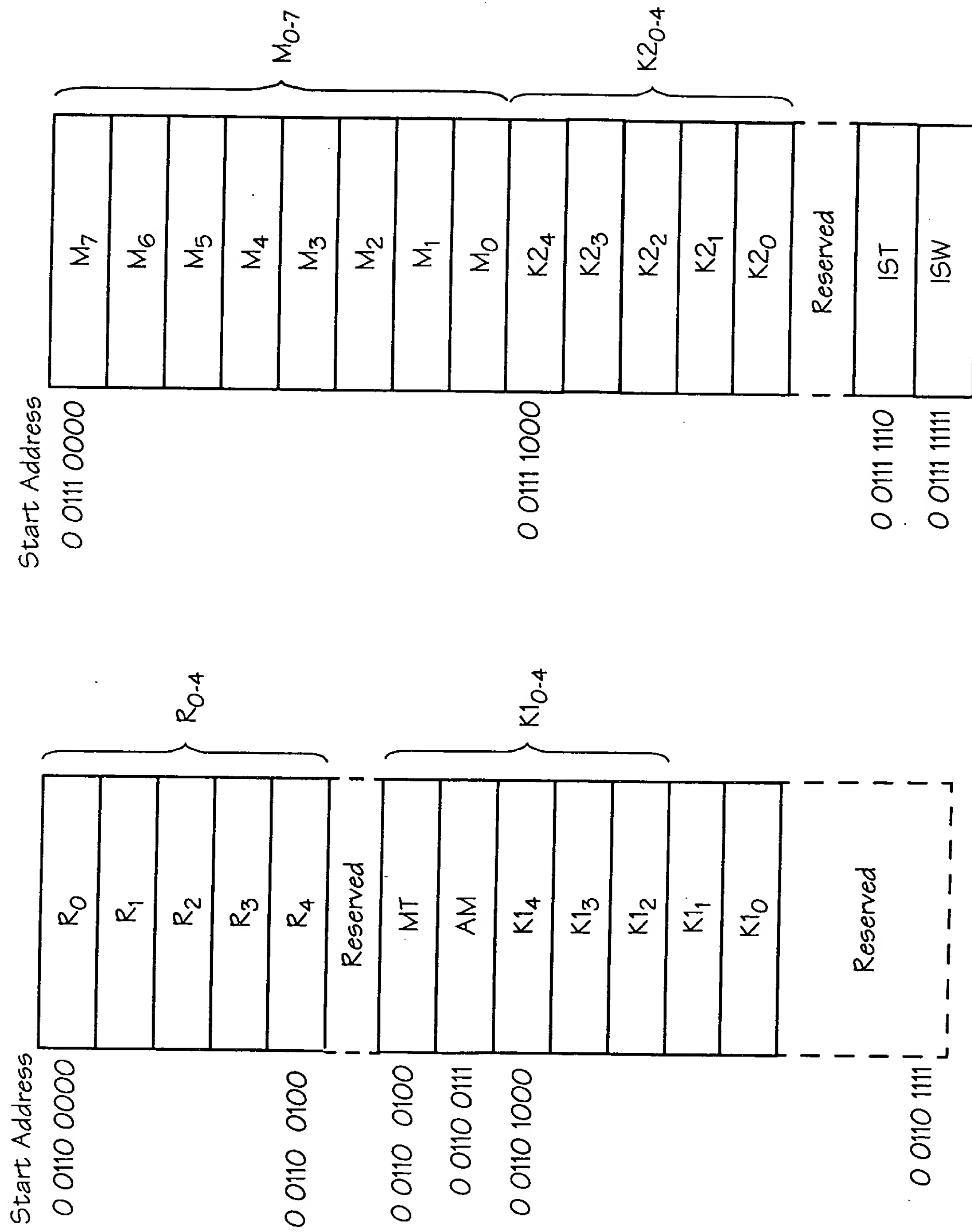


FIG. 185



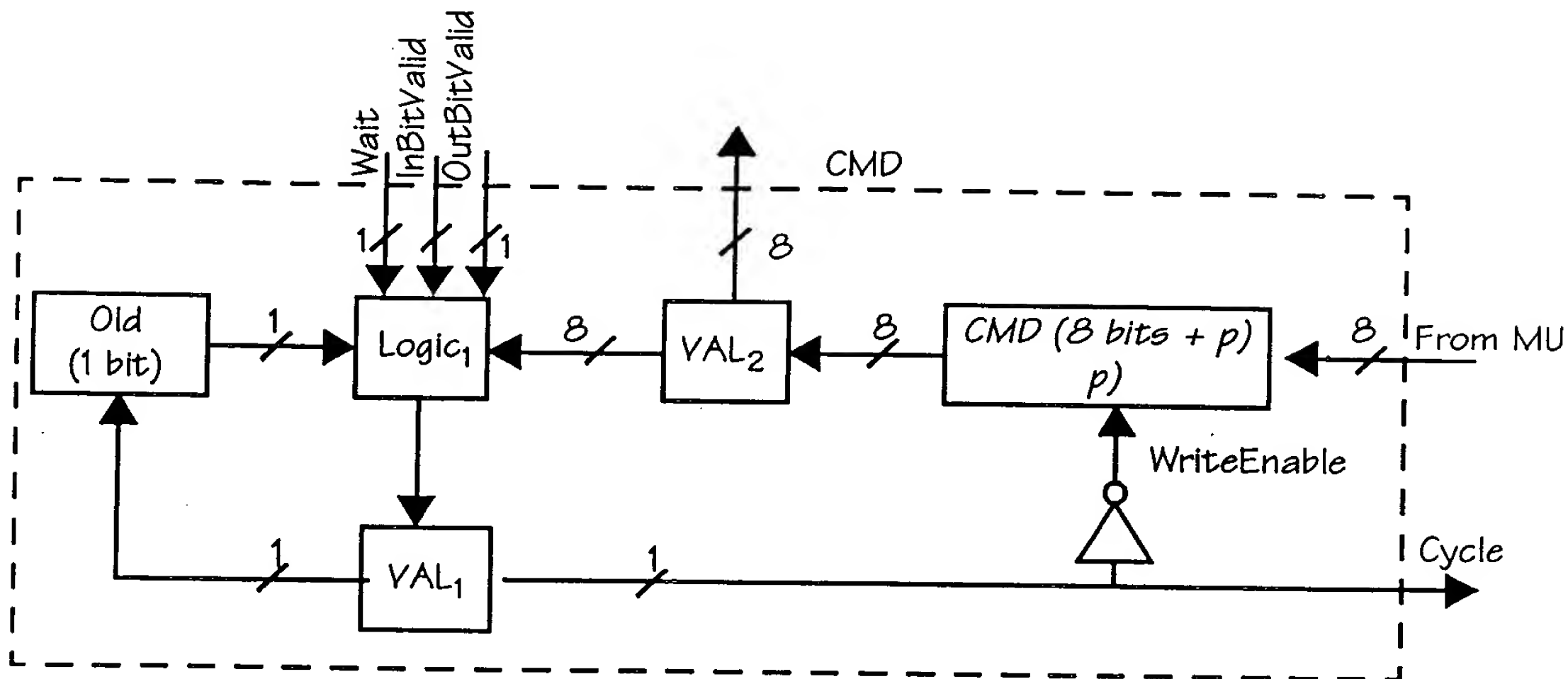


FIG. 187

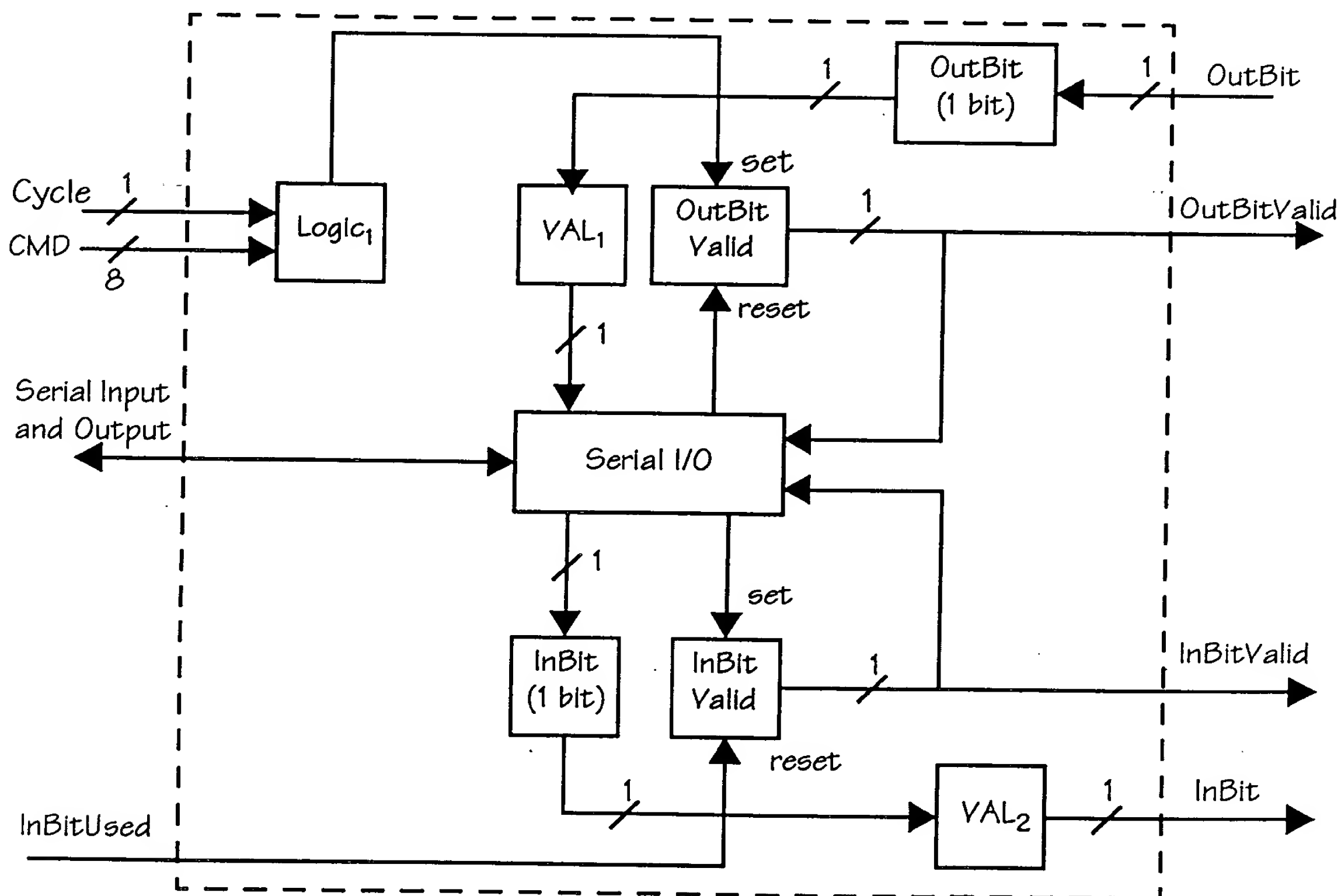


FIG. 188

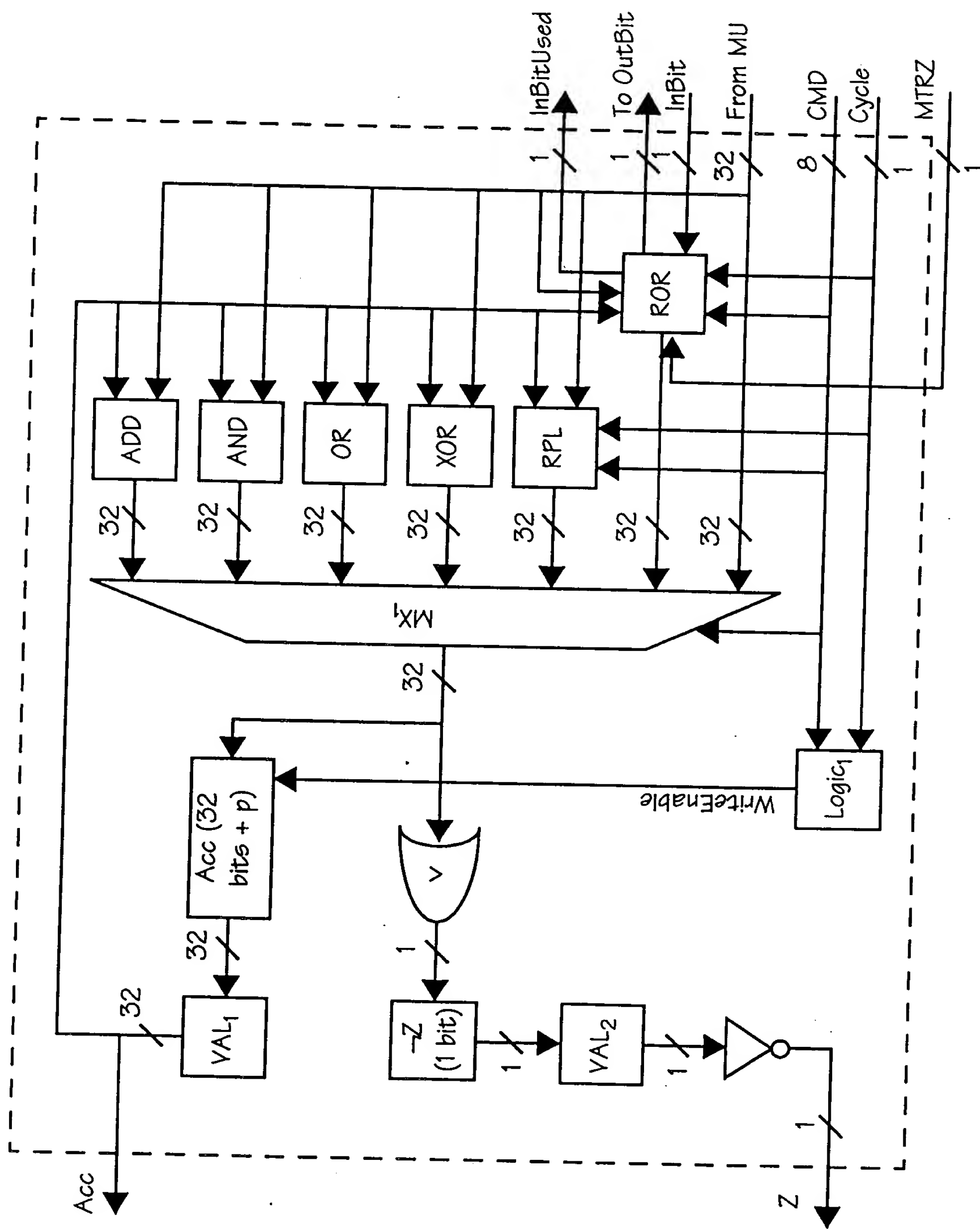


FIG. 189

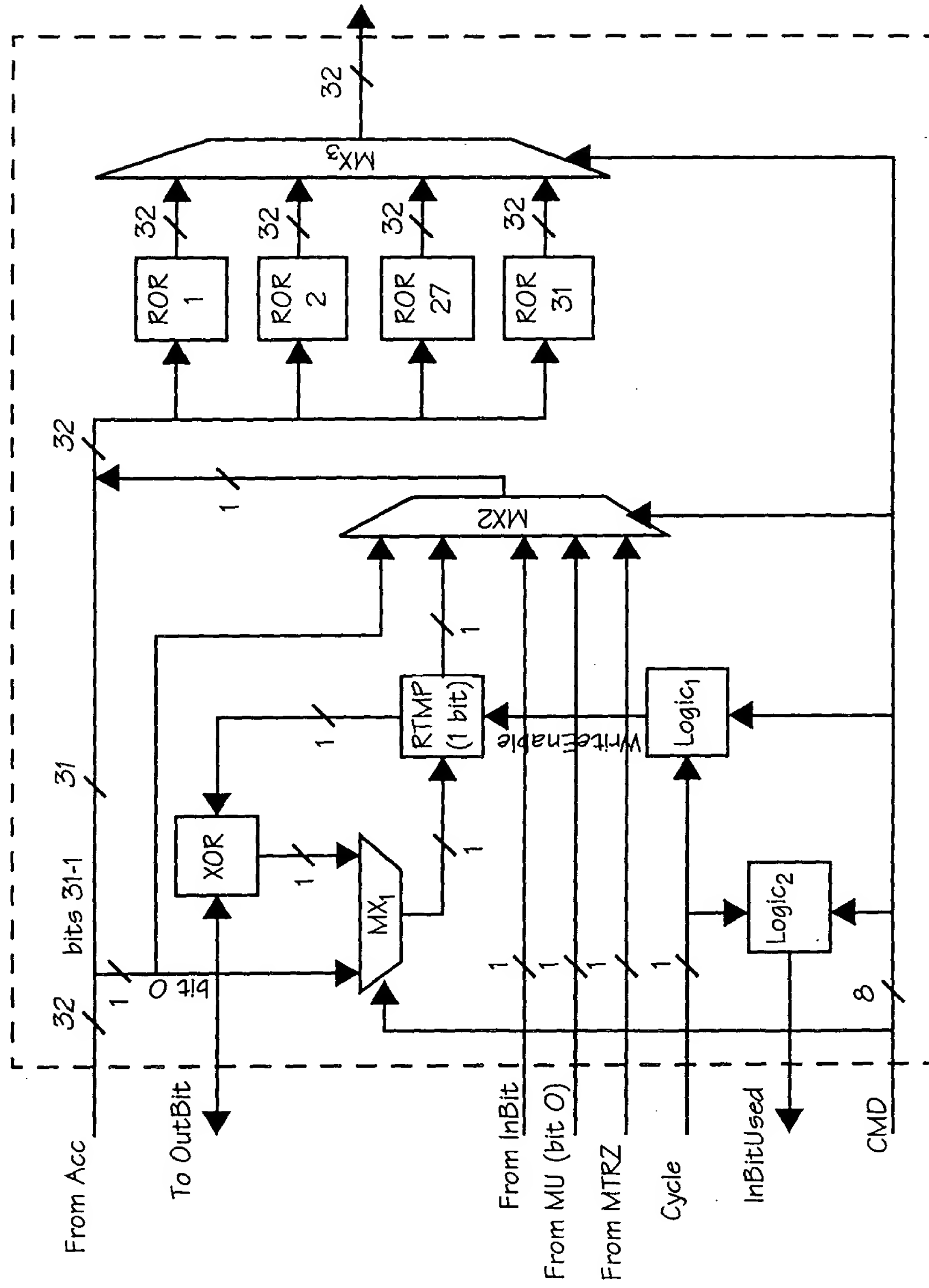


FIG. 190

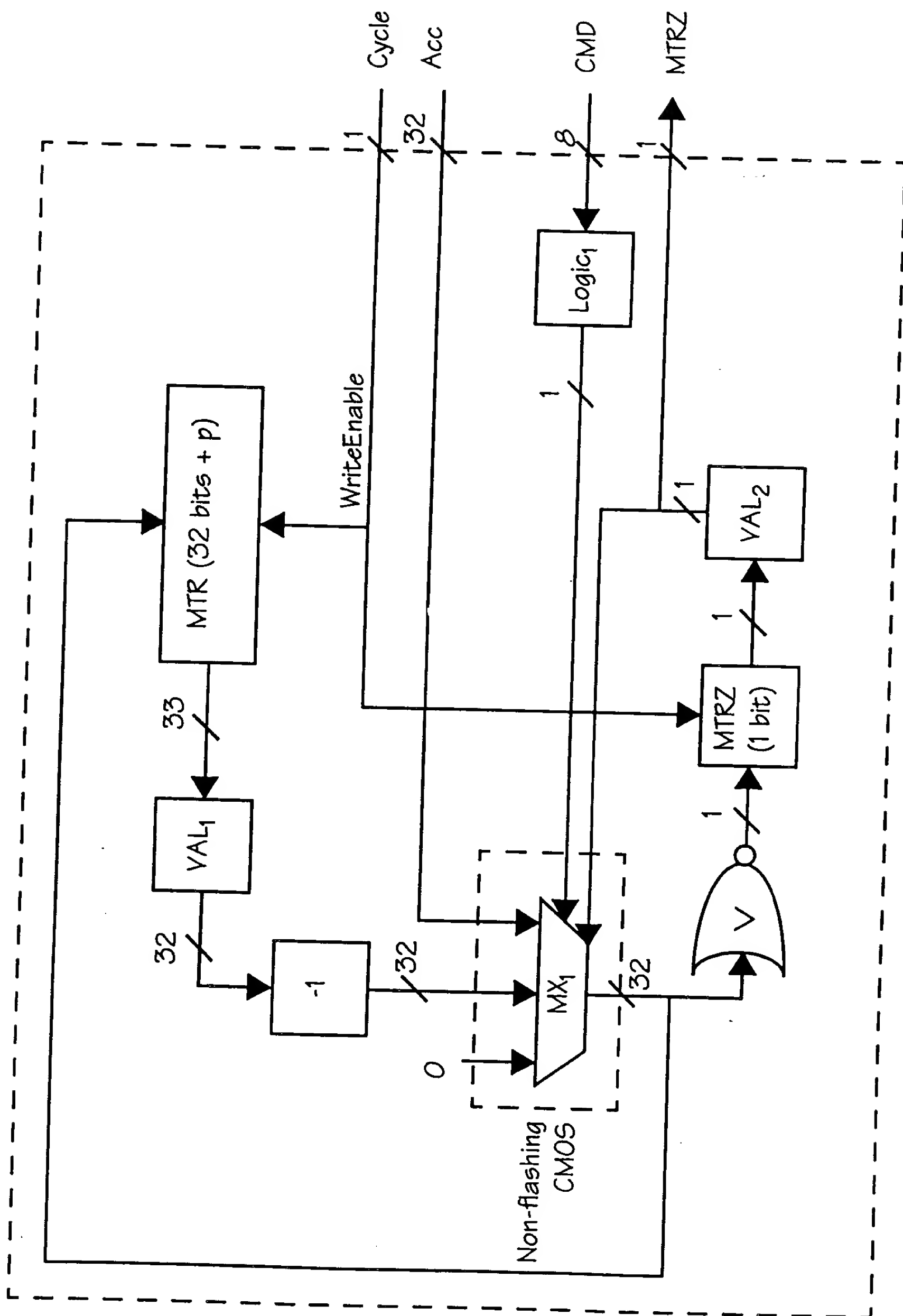


FIG. 191



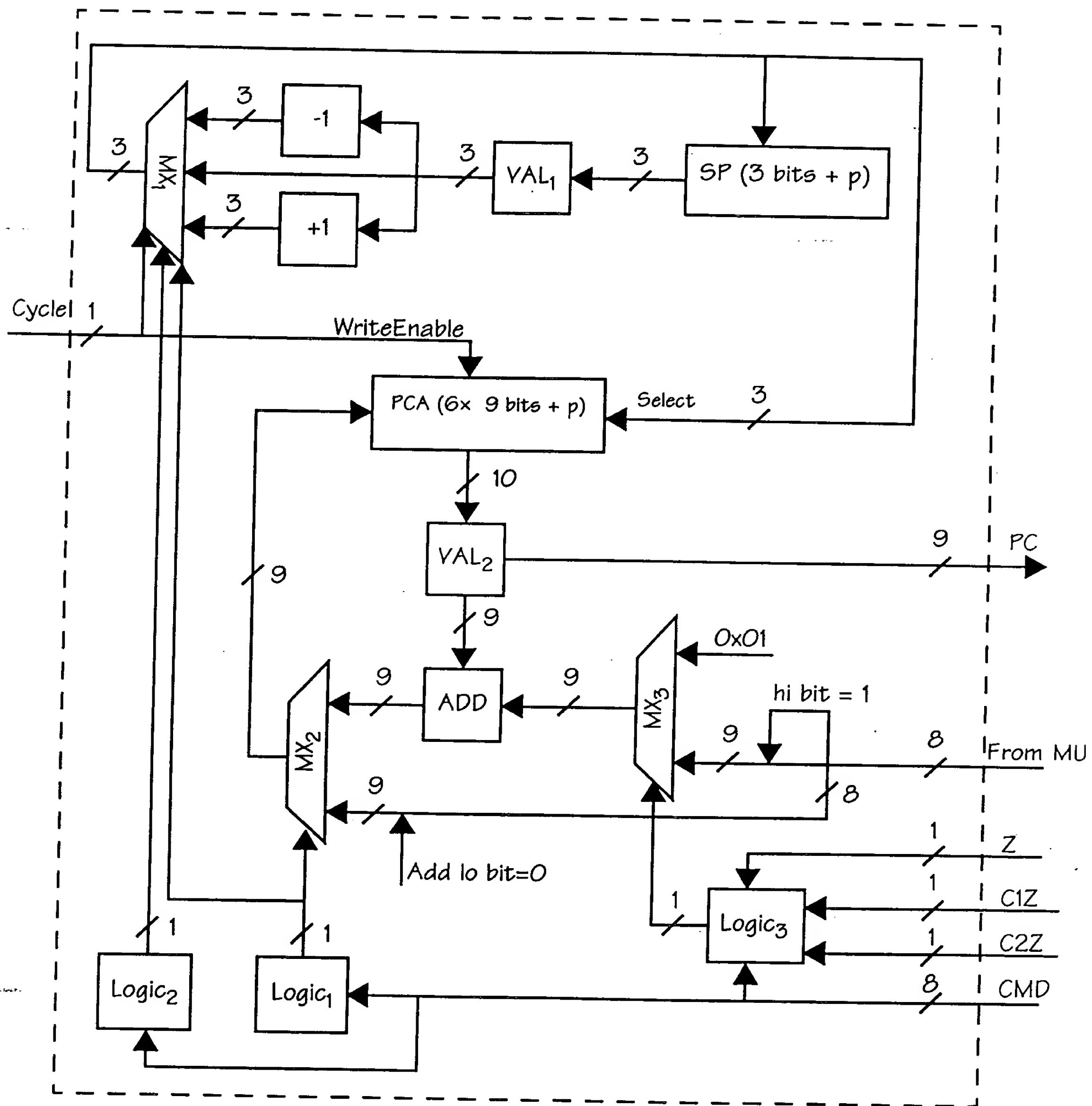


FIG. 192

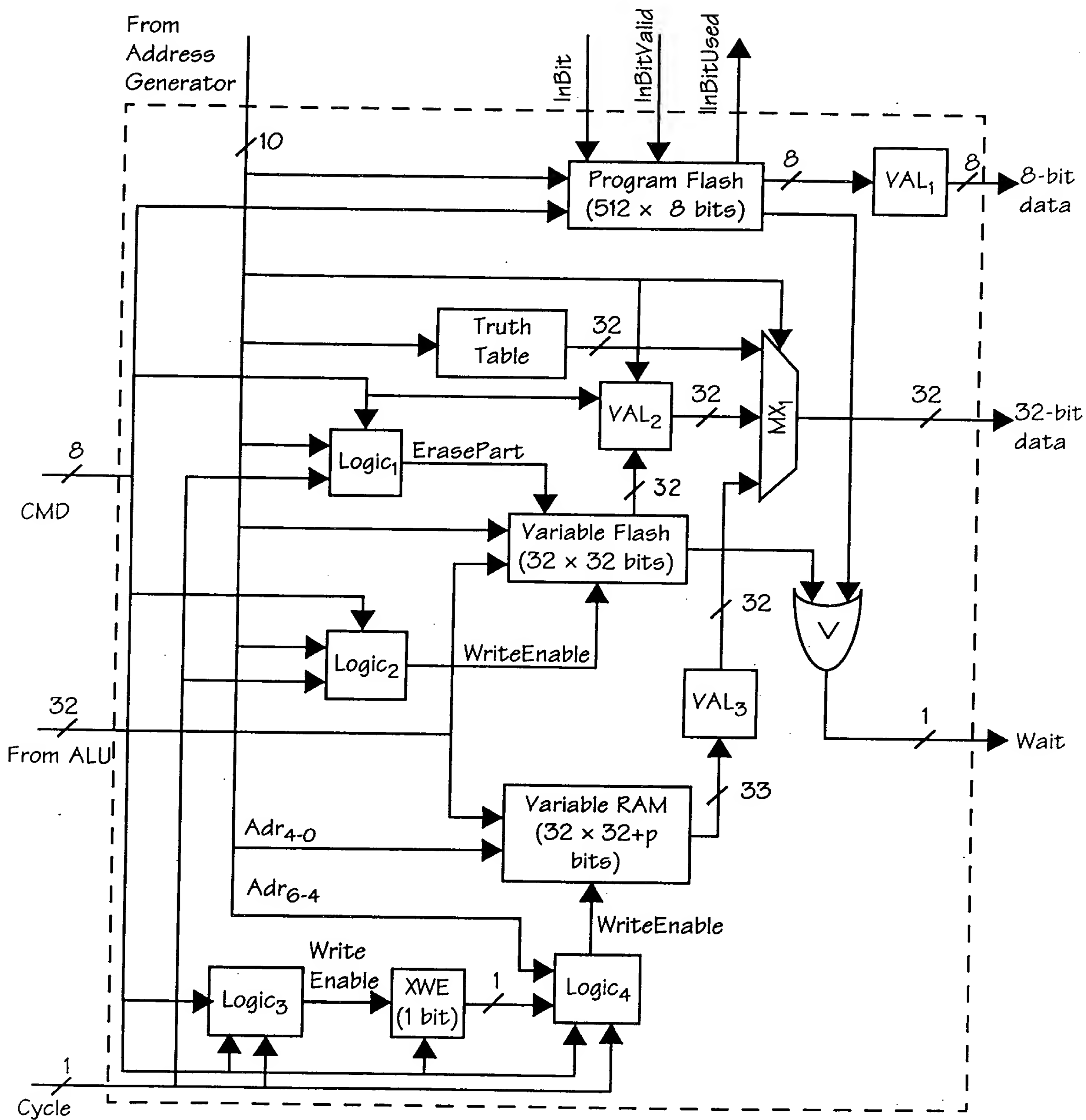


FIG. 193

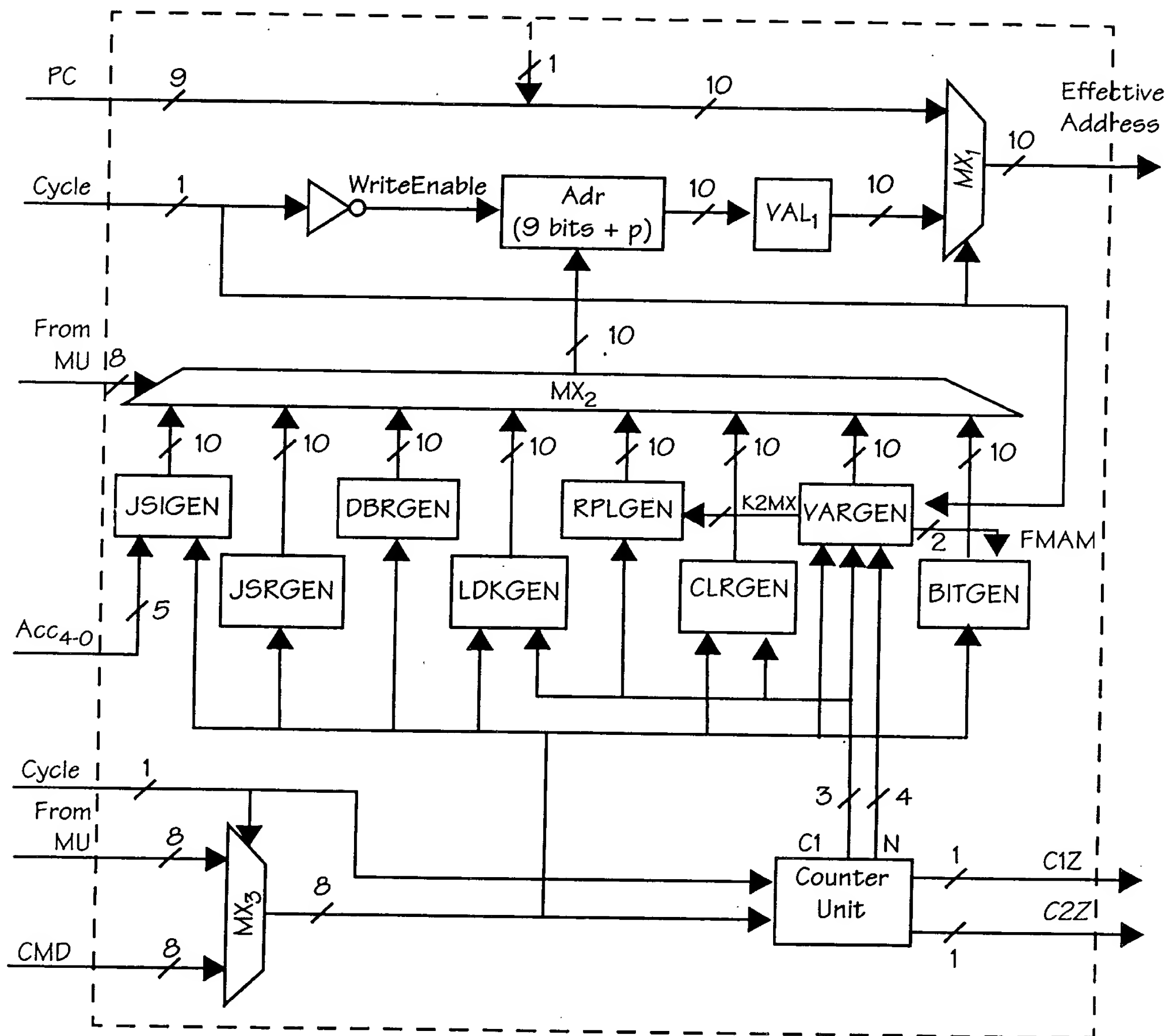


FIG. 194

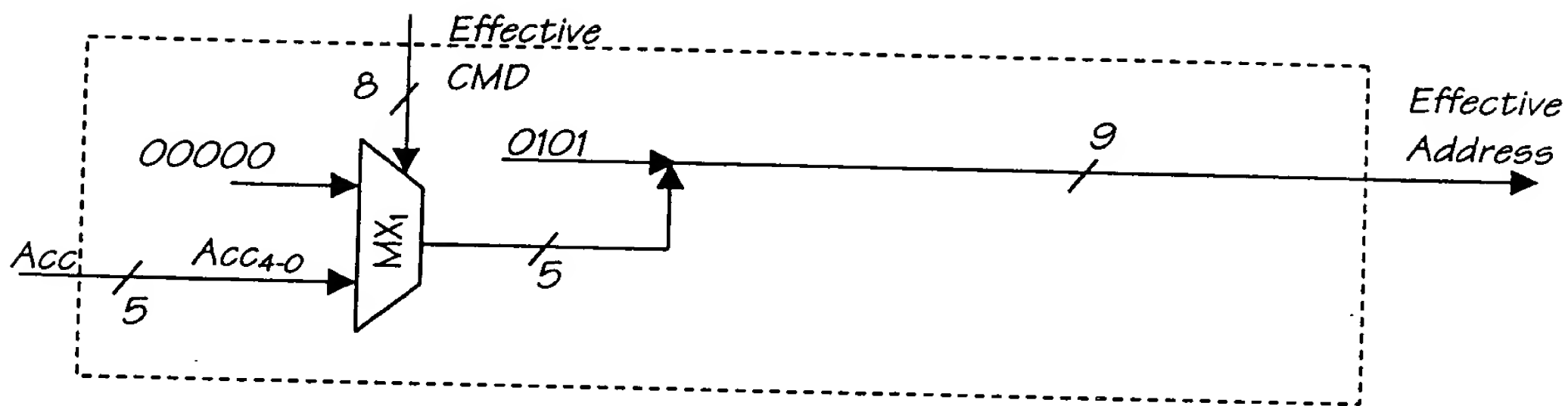


FIG. 195

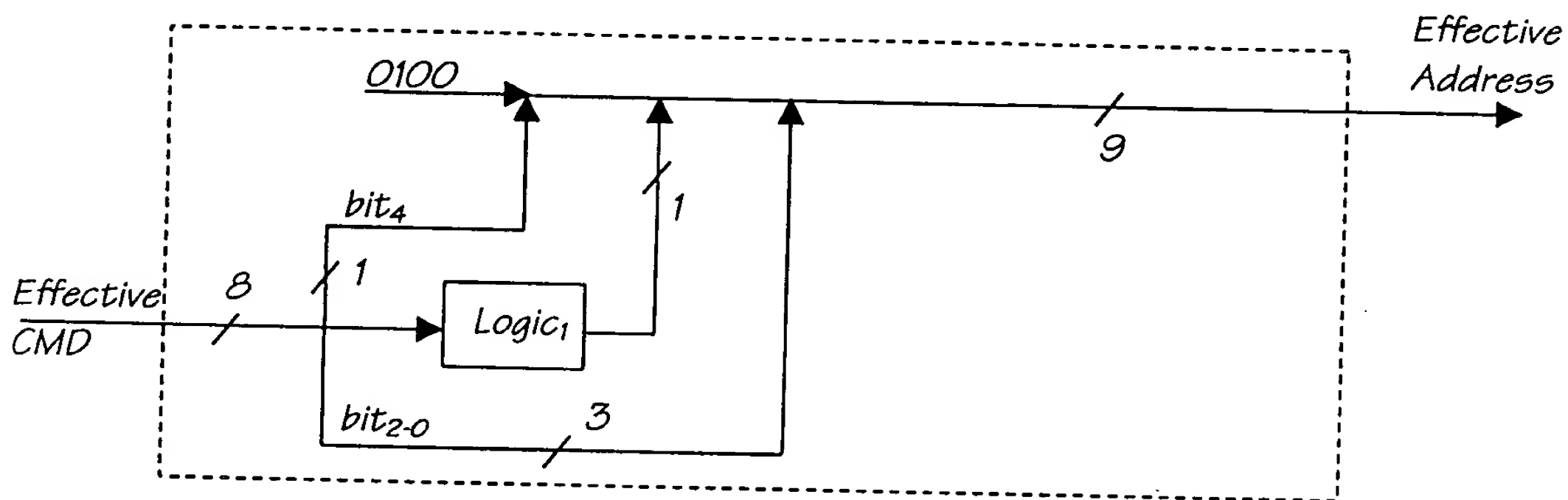


FIG. 196

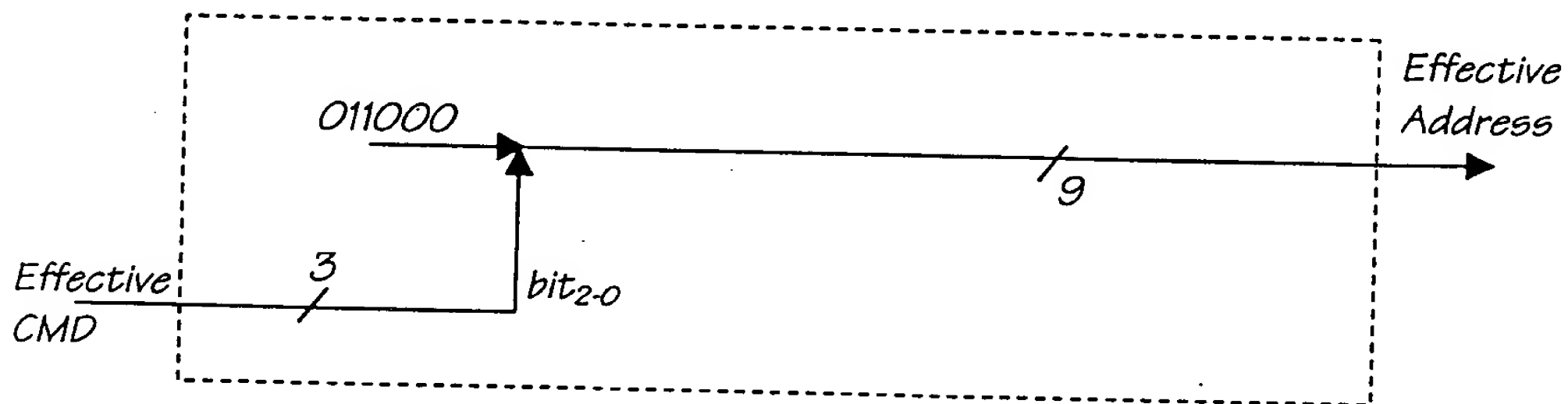


FIG. 197

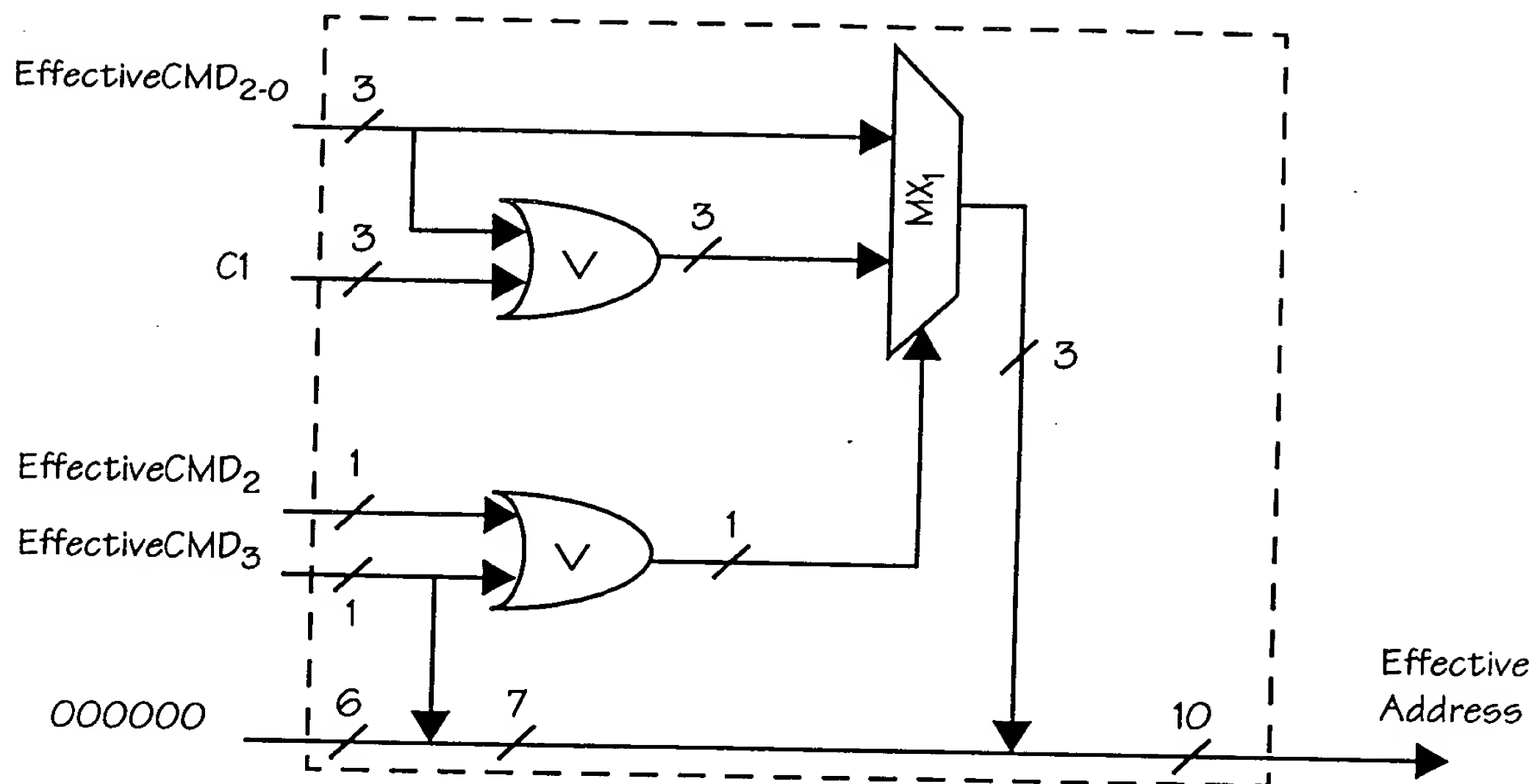


FIG. 198

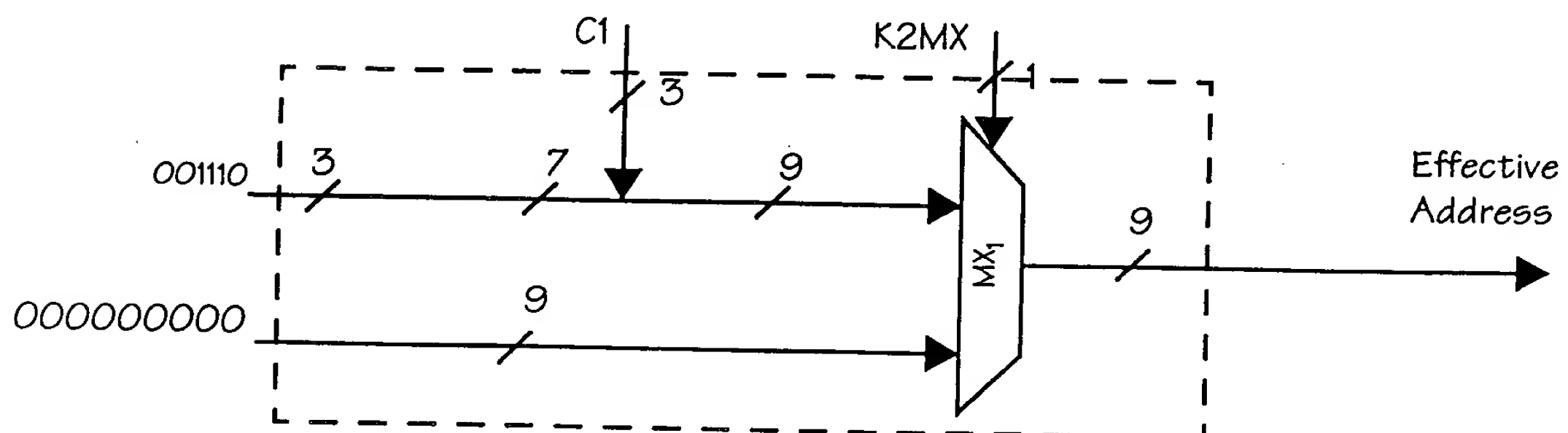


FIG. 199

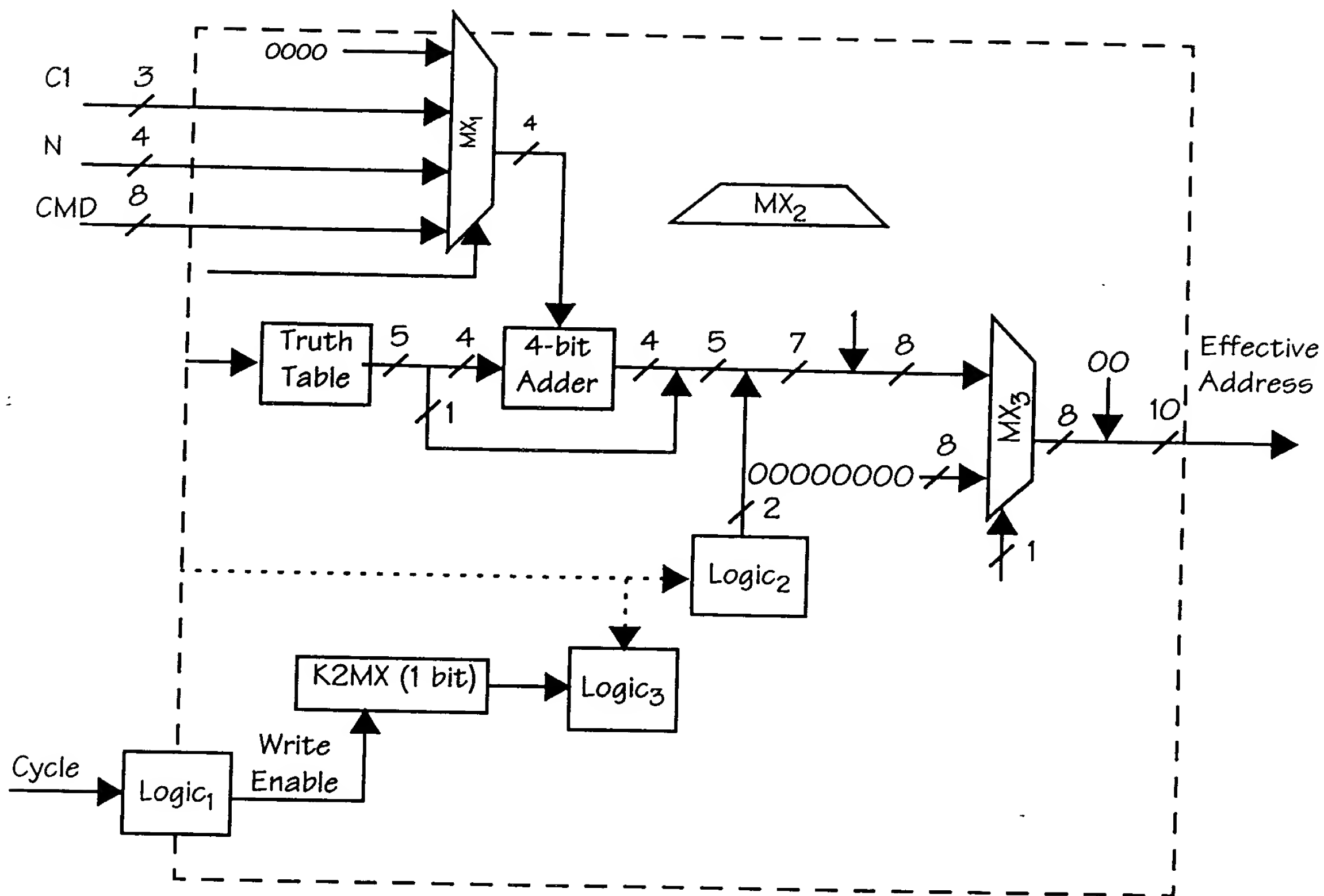


FIG. 200

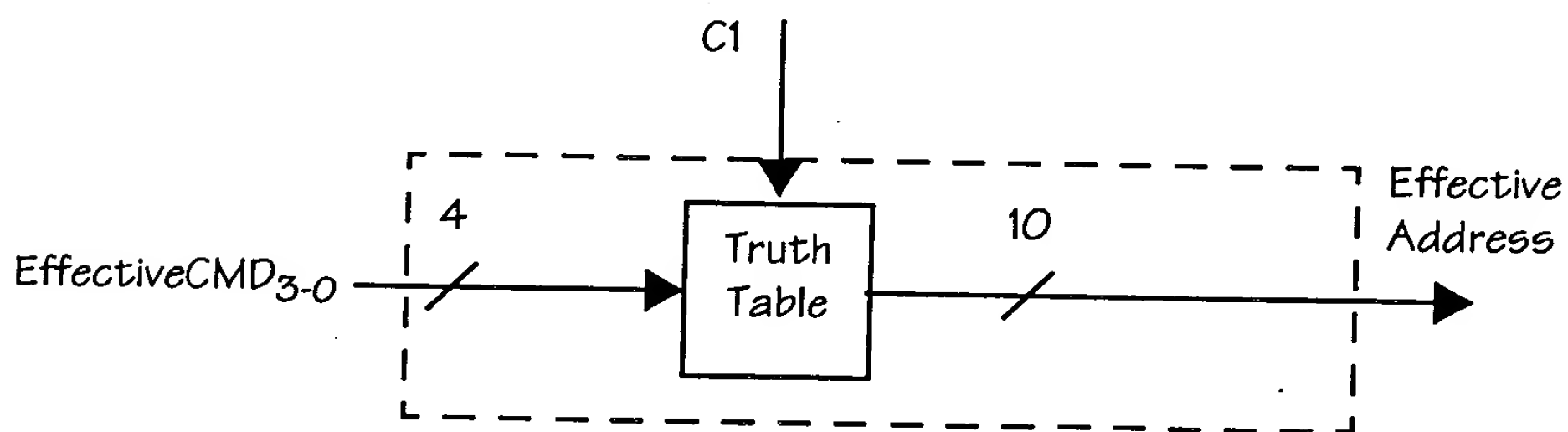


FIG. 201

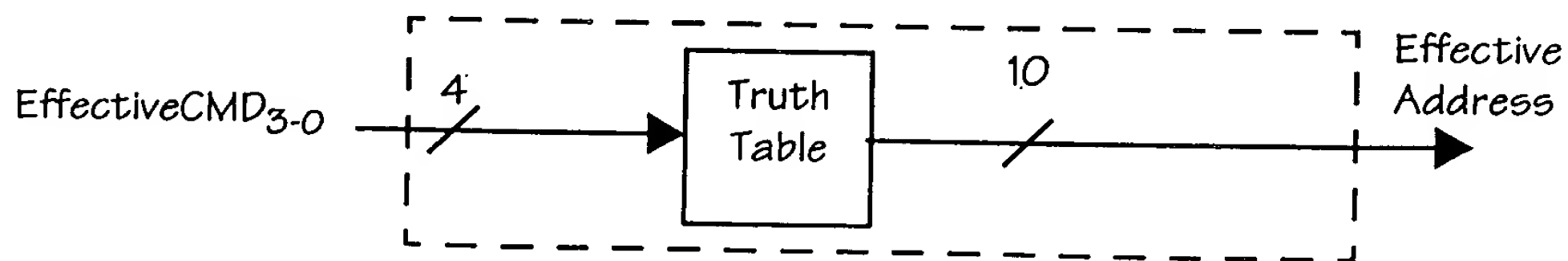


FIG. 202



705

DATA TYPE	BITS
Factory Code	16
Batch Number	32
Serial Number	48
Manufacturing Date	16
Media Length	24
Media Type	8
Preprinted Media Length	16
Cyan Ink Viscosity	8
Magenta Ink Viscosity	8
Yellow Ink Viscosity	8
Cyan Drop Volume	8
Magenta Drop Volume	8
Yellow Drop Volume	8
Cyan Ink Color	24
Magenta Ink Color	24
Yellow Ink Color	24
Remaining-media Length Indicator	16
Authentication Key	128
Copyrightable bit pattern	512
Reserved for Camera Use	88
TOTAL	1024

728

FIG. 204



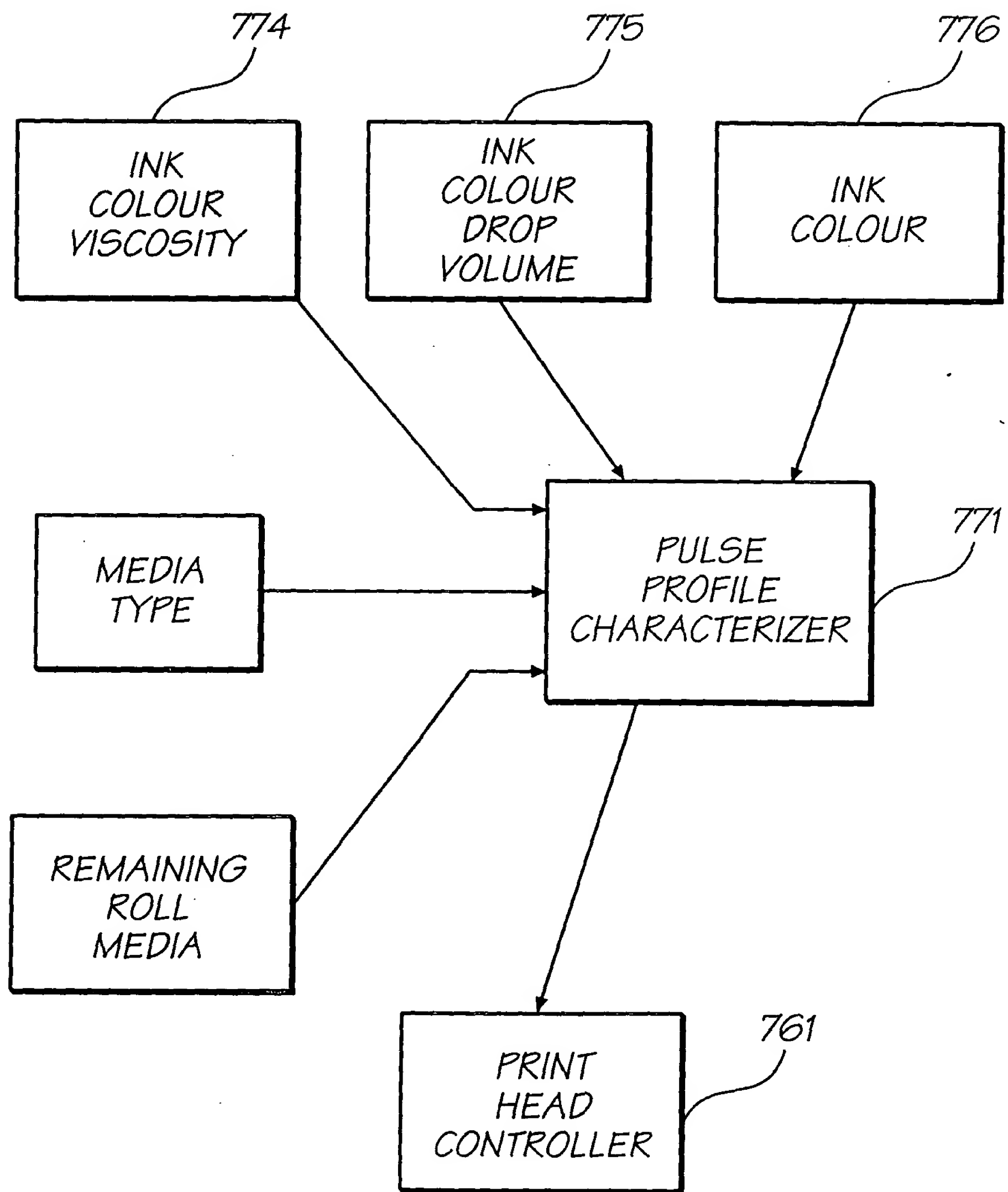


FIG. 205

FIG. 206

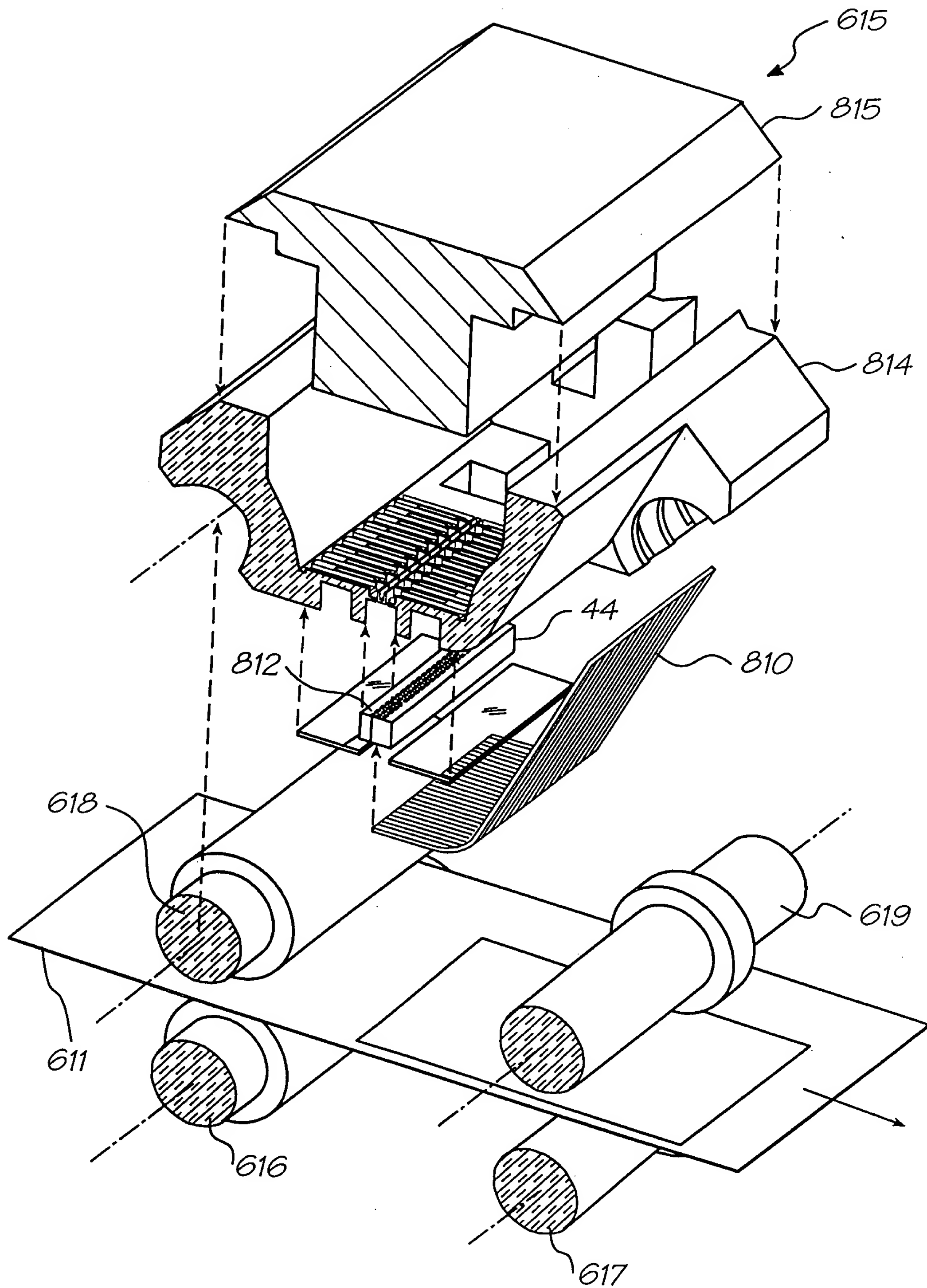


FIG. 206

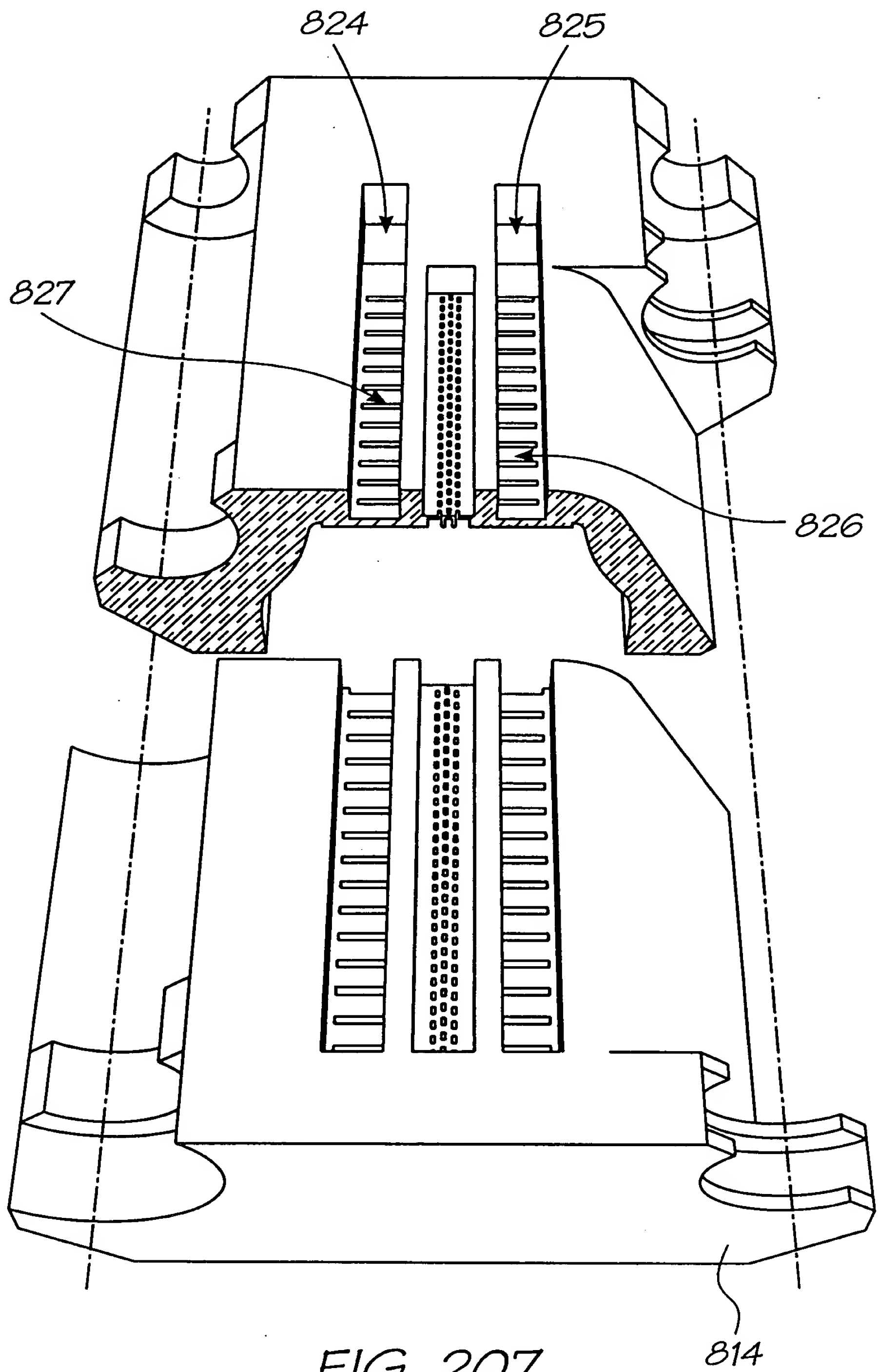


FIG. 207

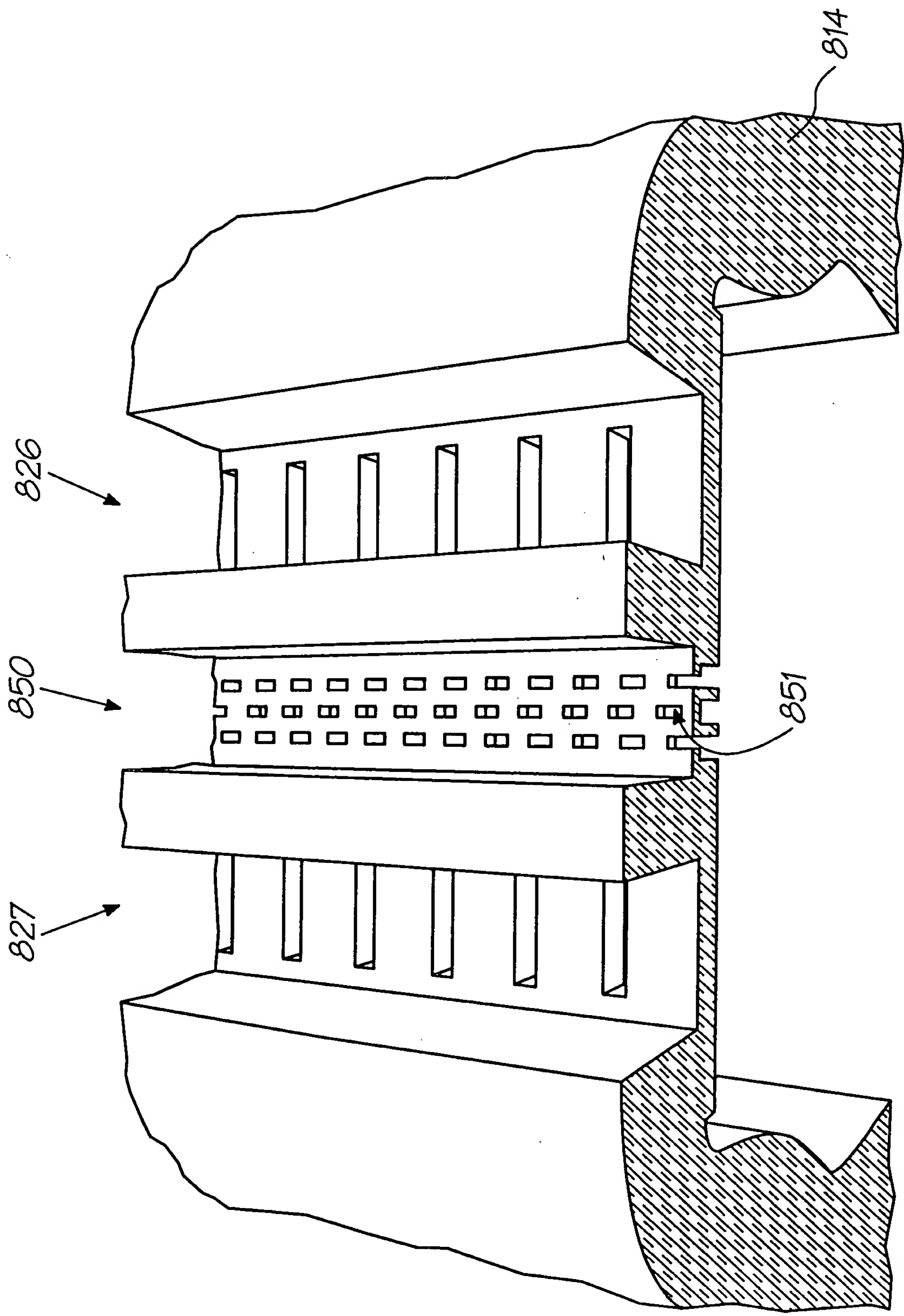


FIG. 208

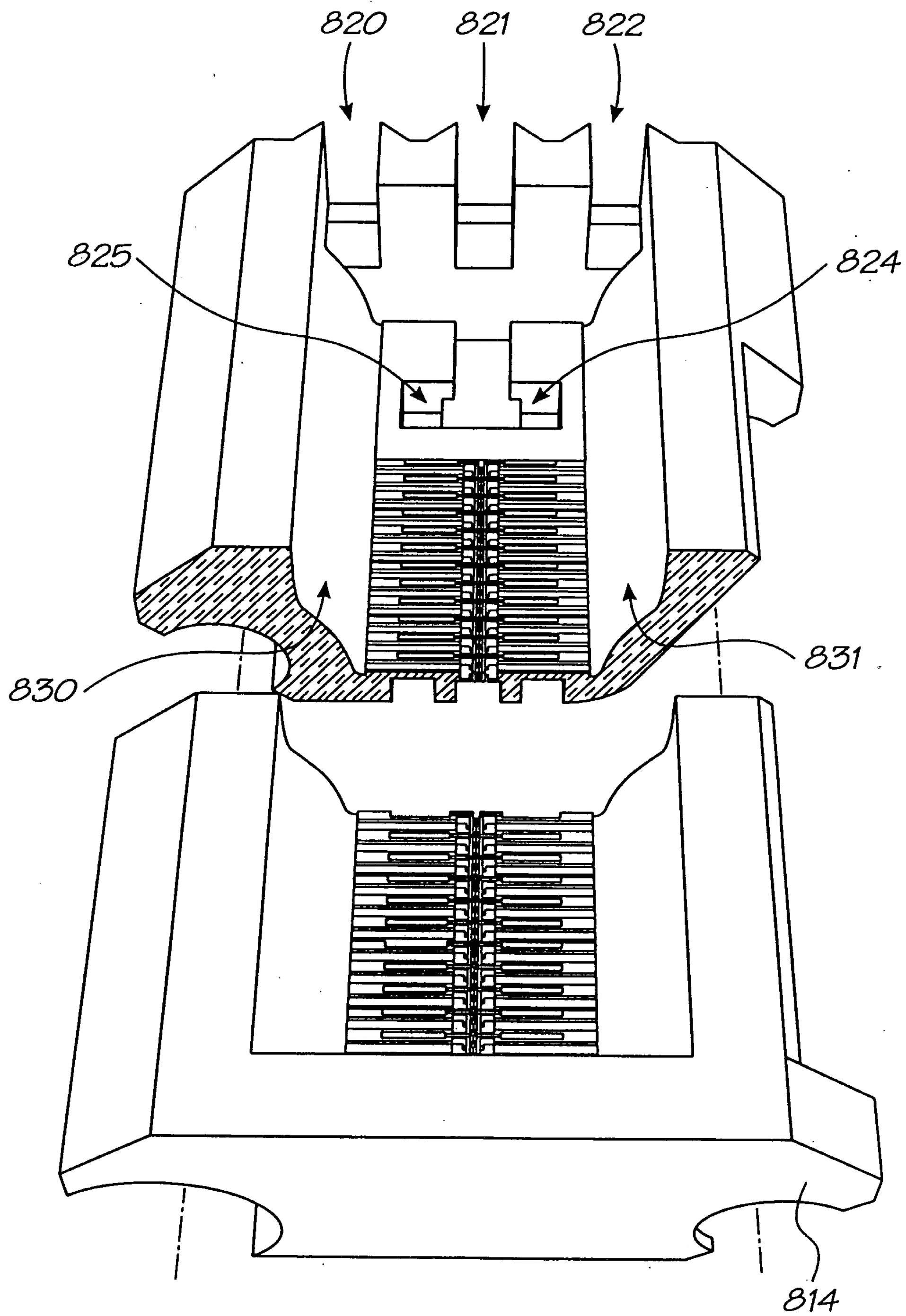


FIG. 209

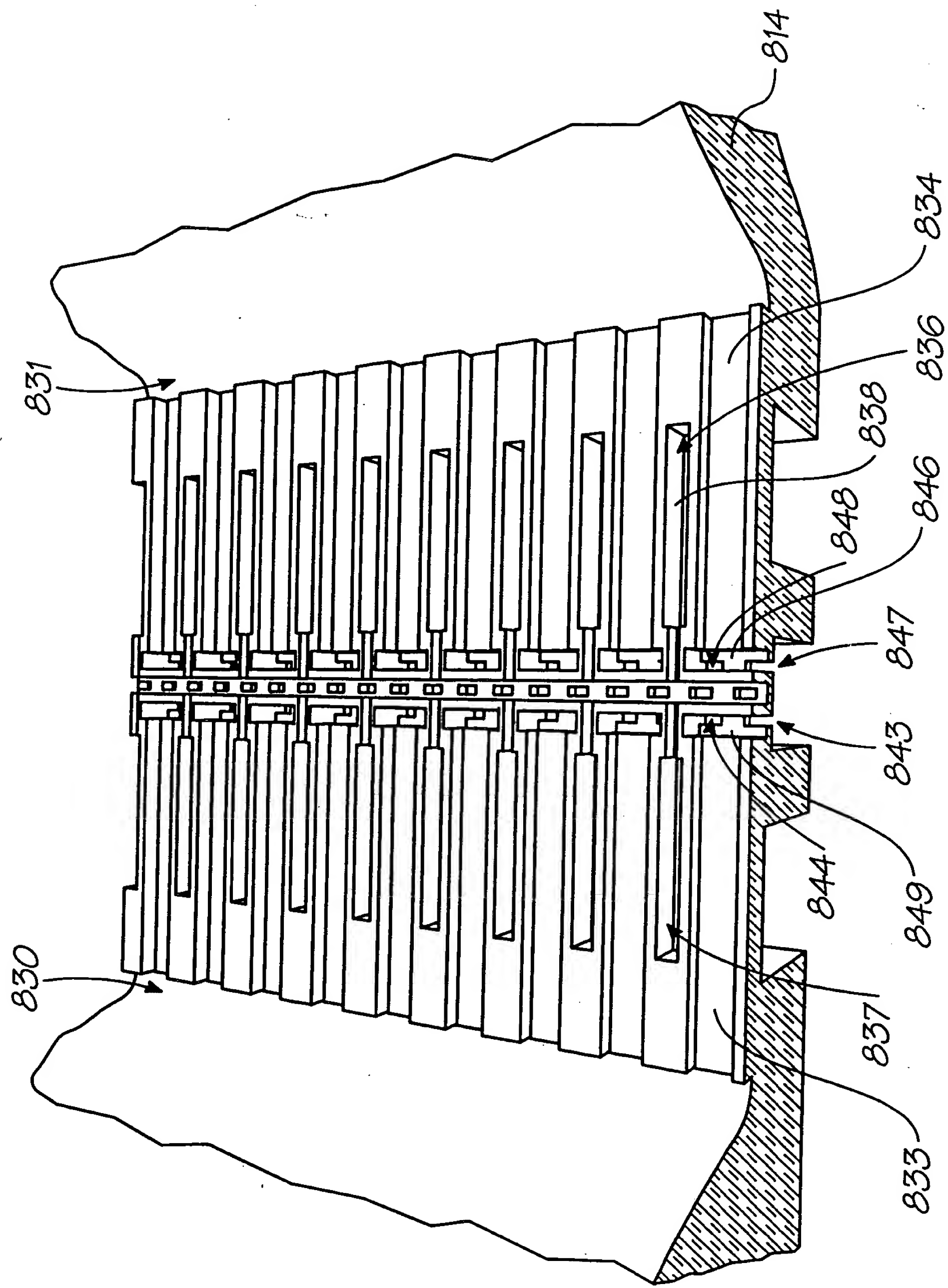


FIG. 210

FIG. 211

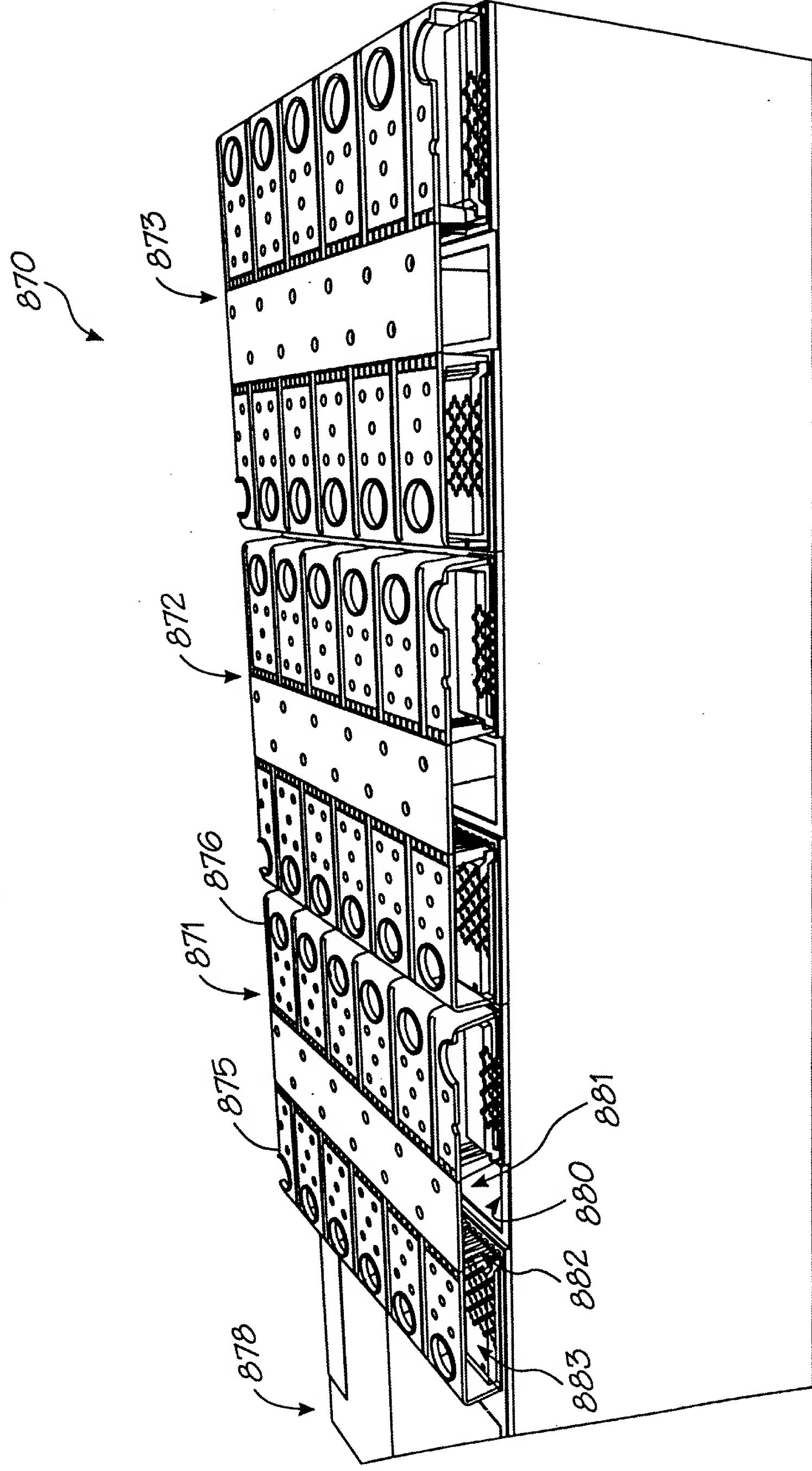


FIG. 211

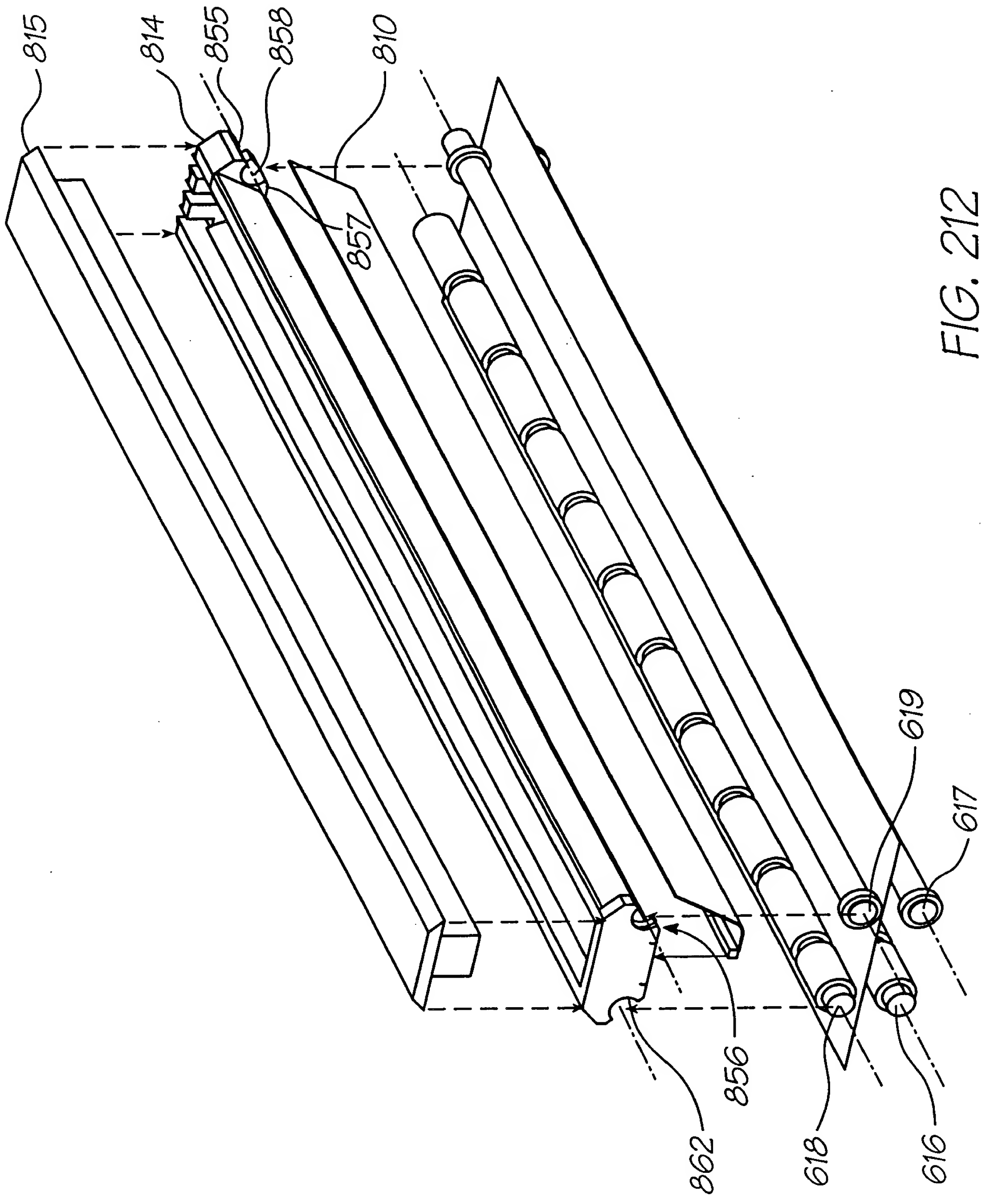


FIG. 212



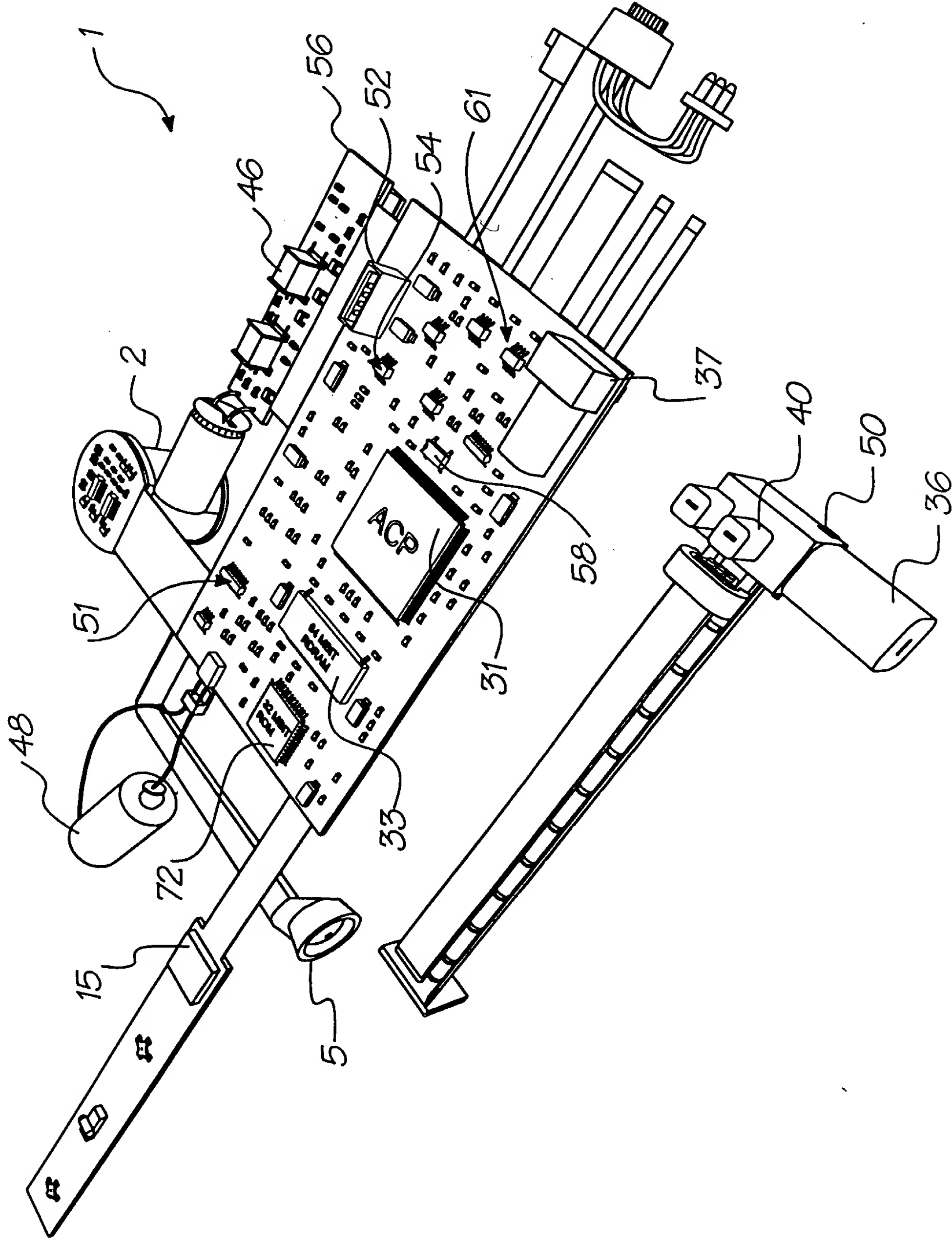


FIG. 213

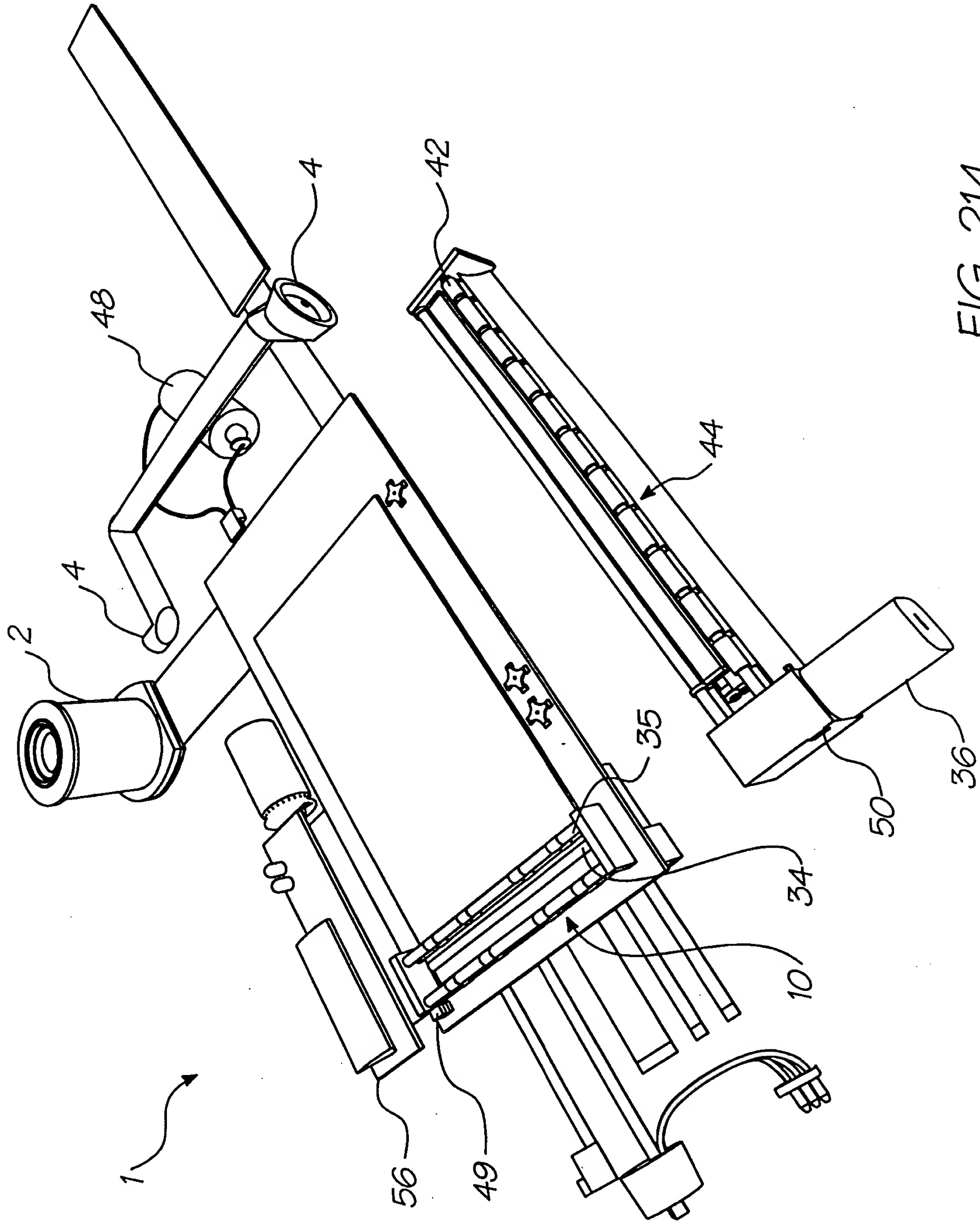


FIG. 214

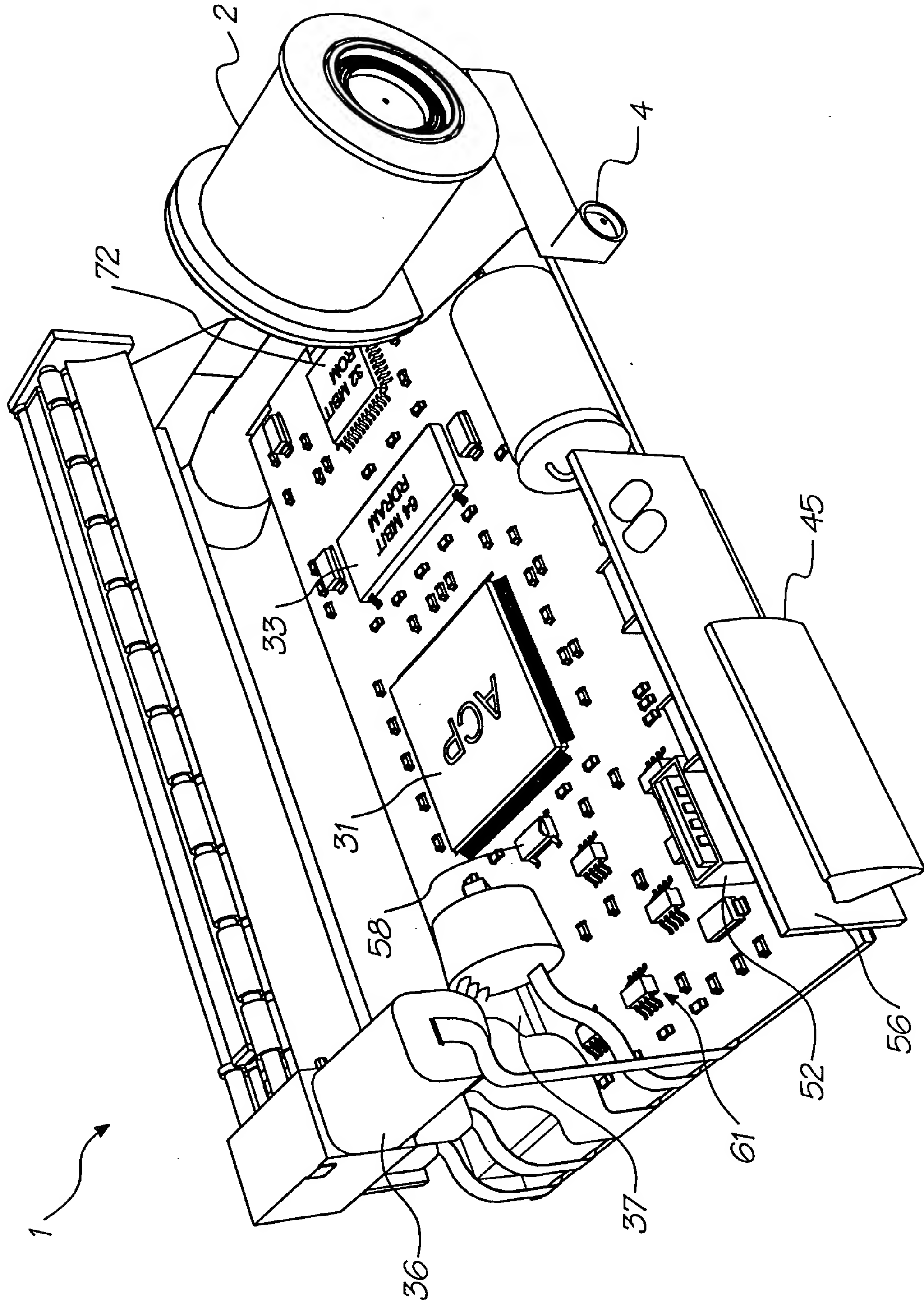


FIG. 215

FIG. 216

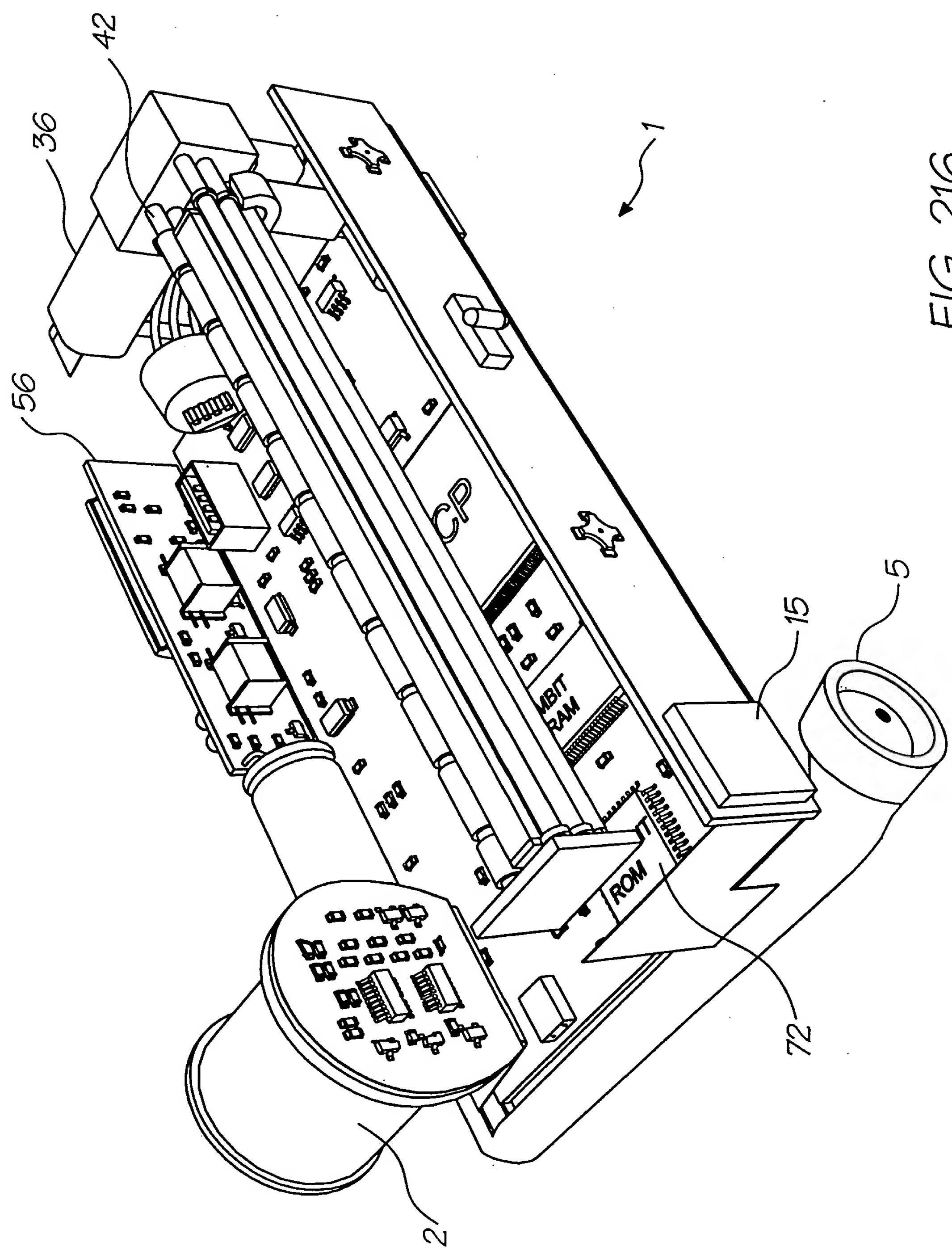


FIG. 216

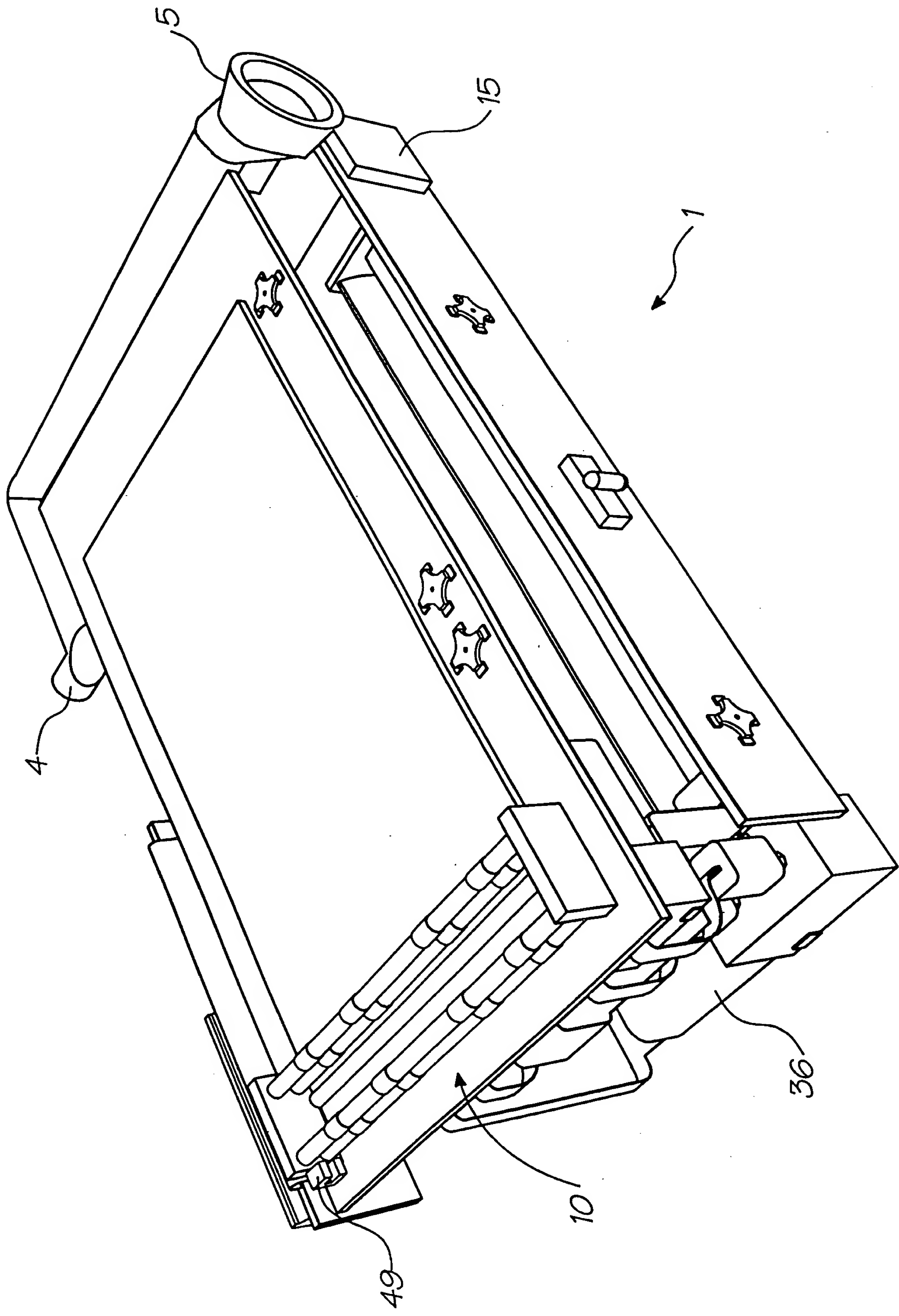


FIG. 217

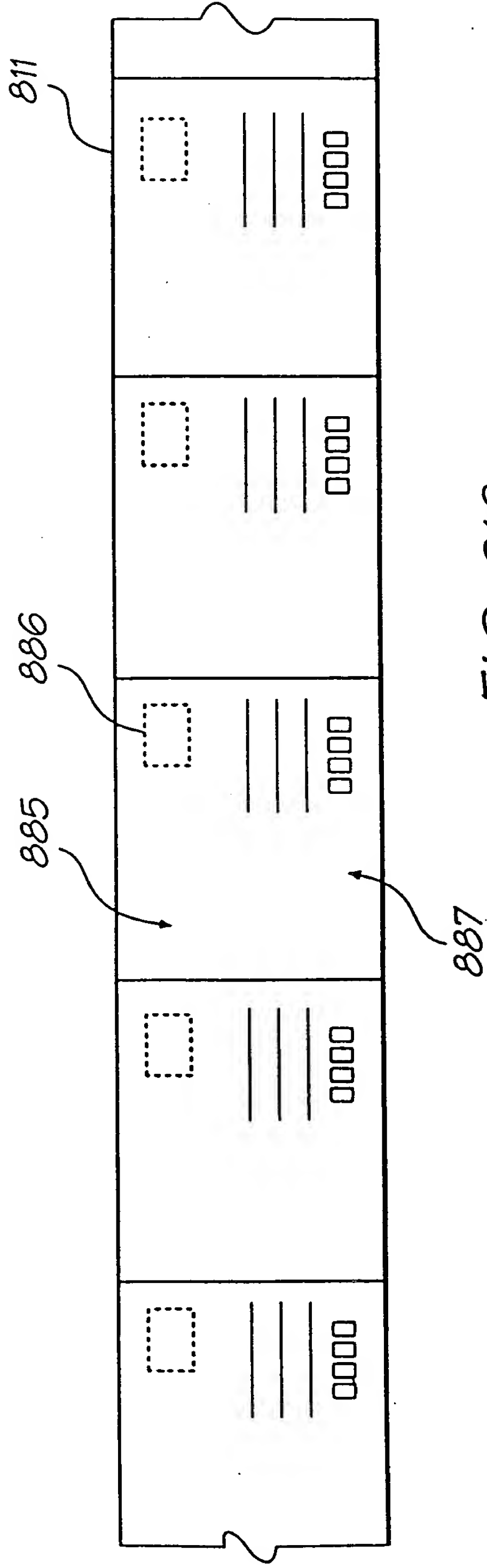


FIG. 218

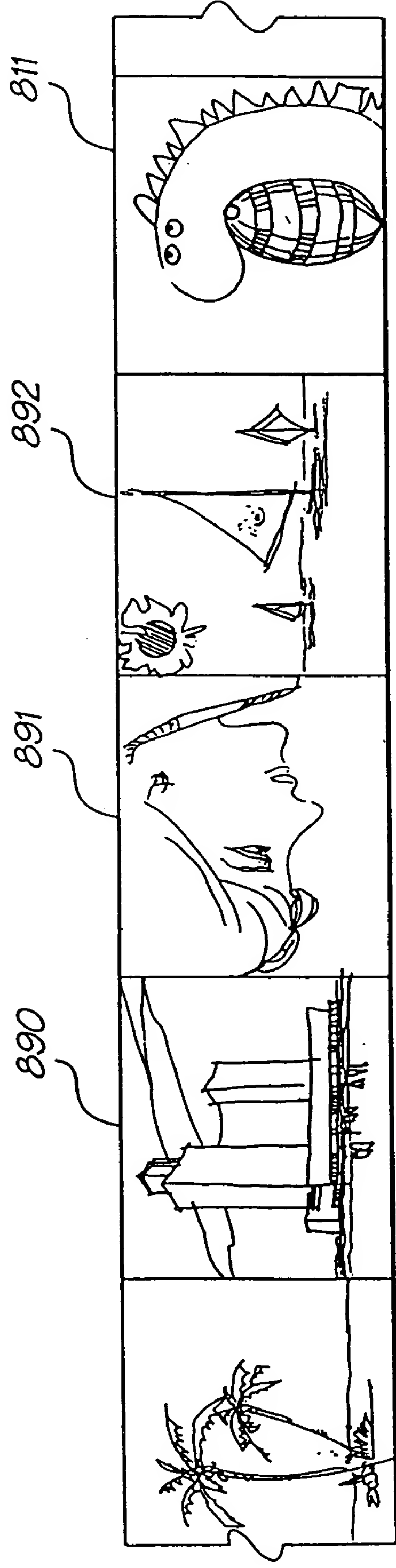


FIG. 219

FIG. 220

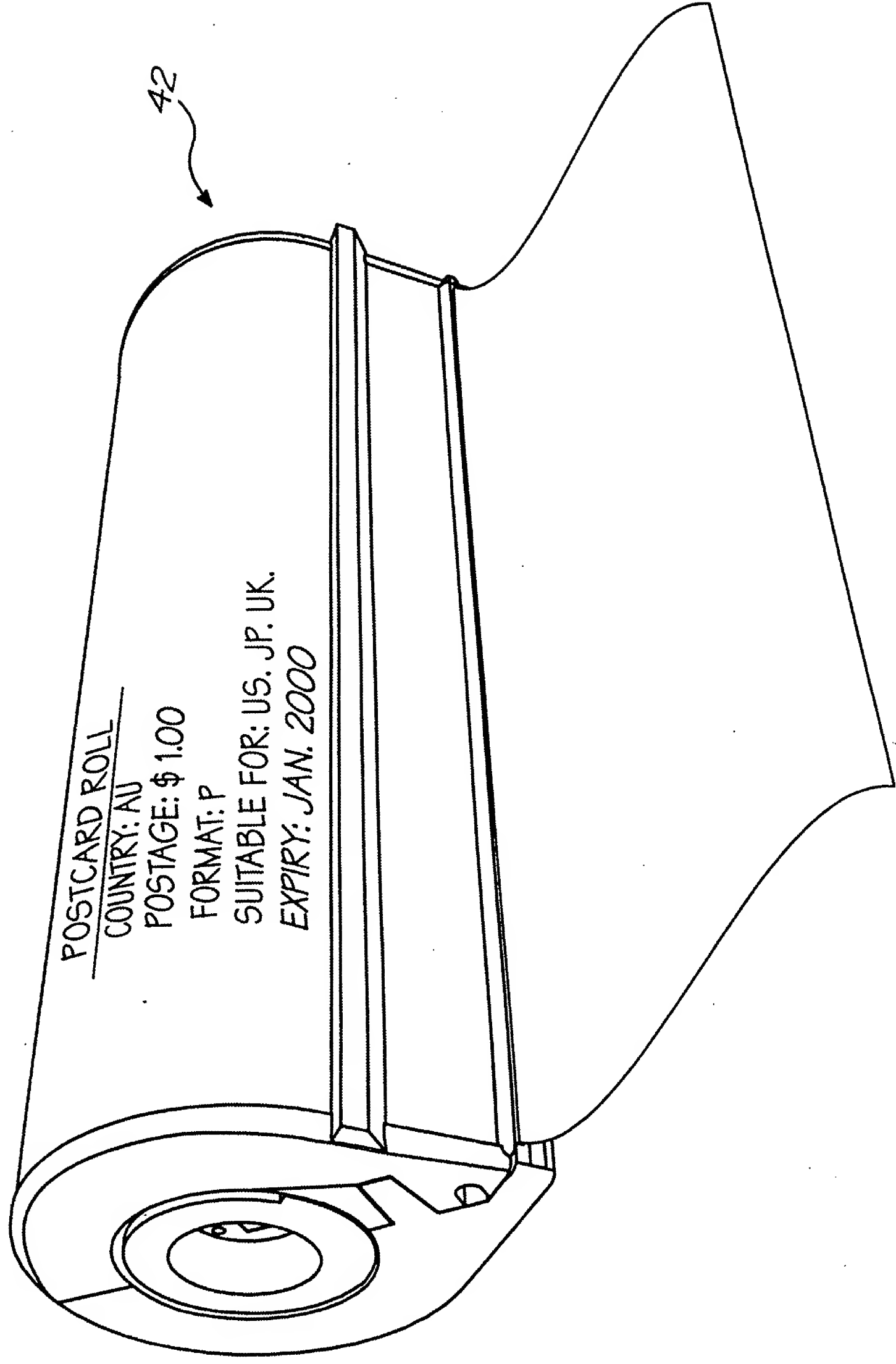


FIG. 220

FIG. 221

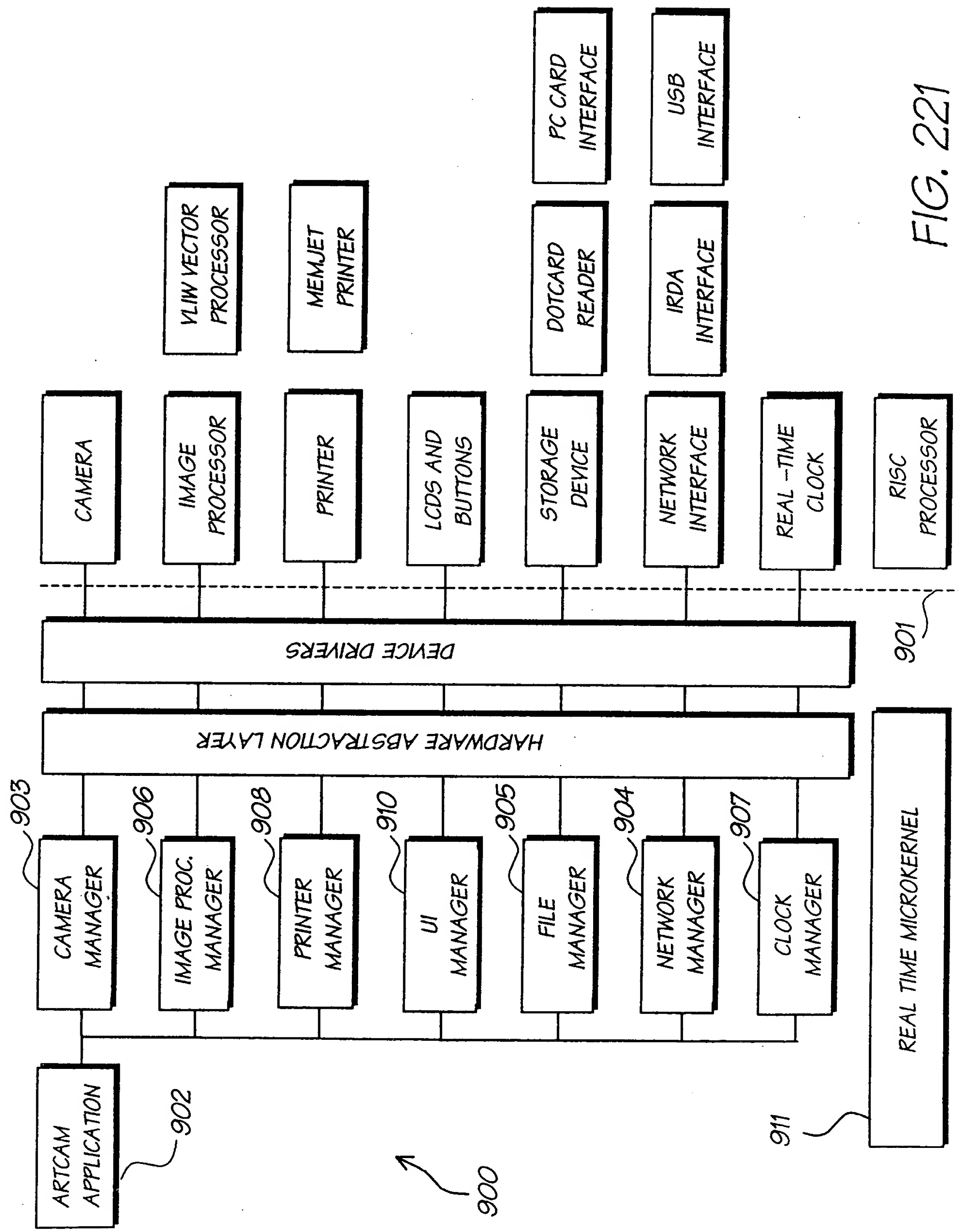
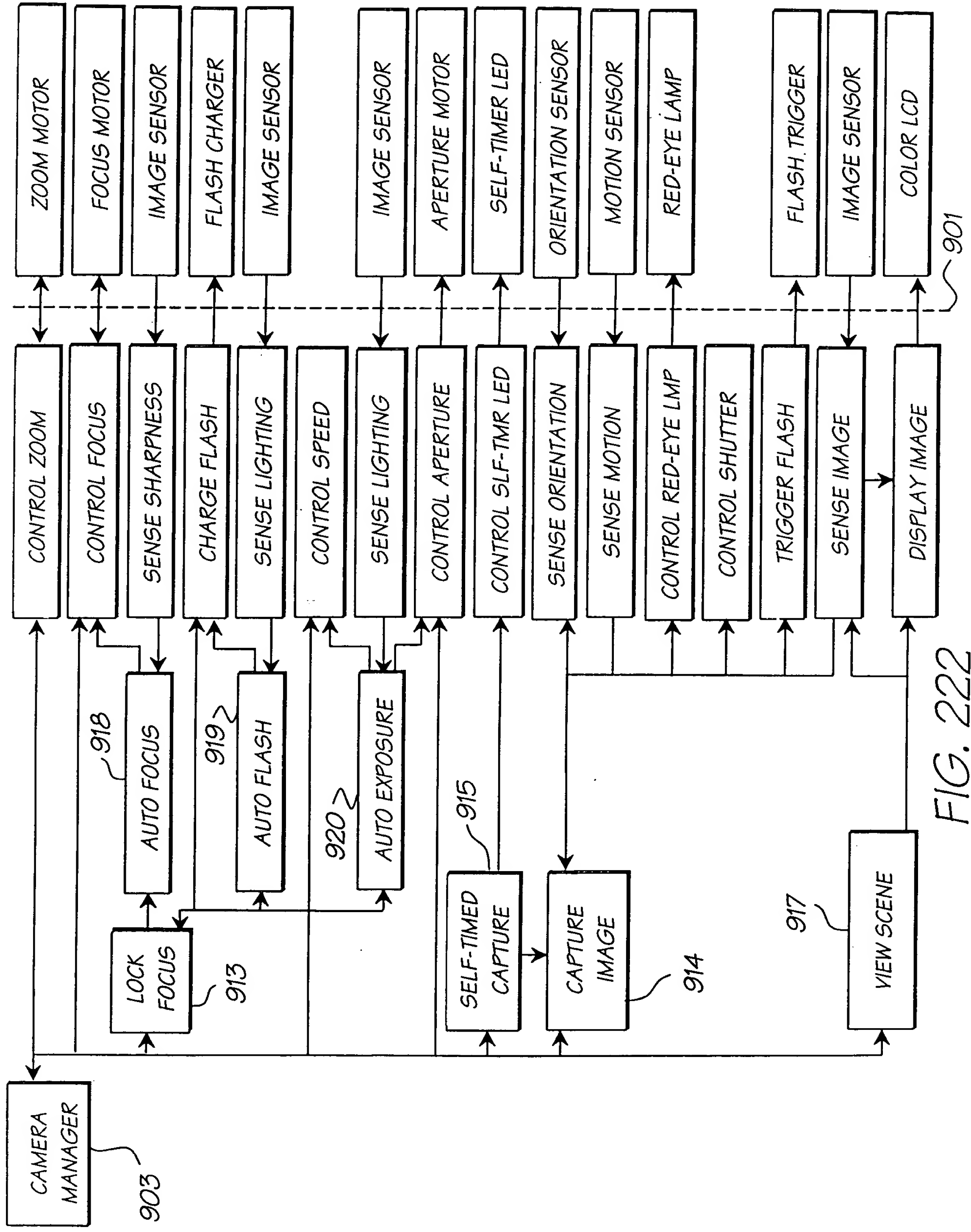


FIG. 221





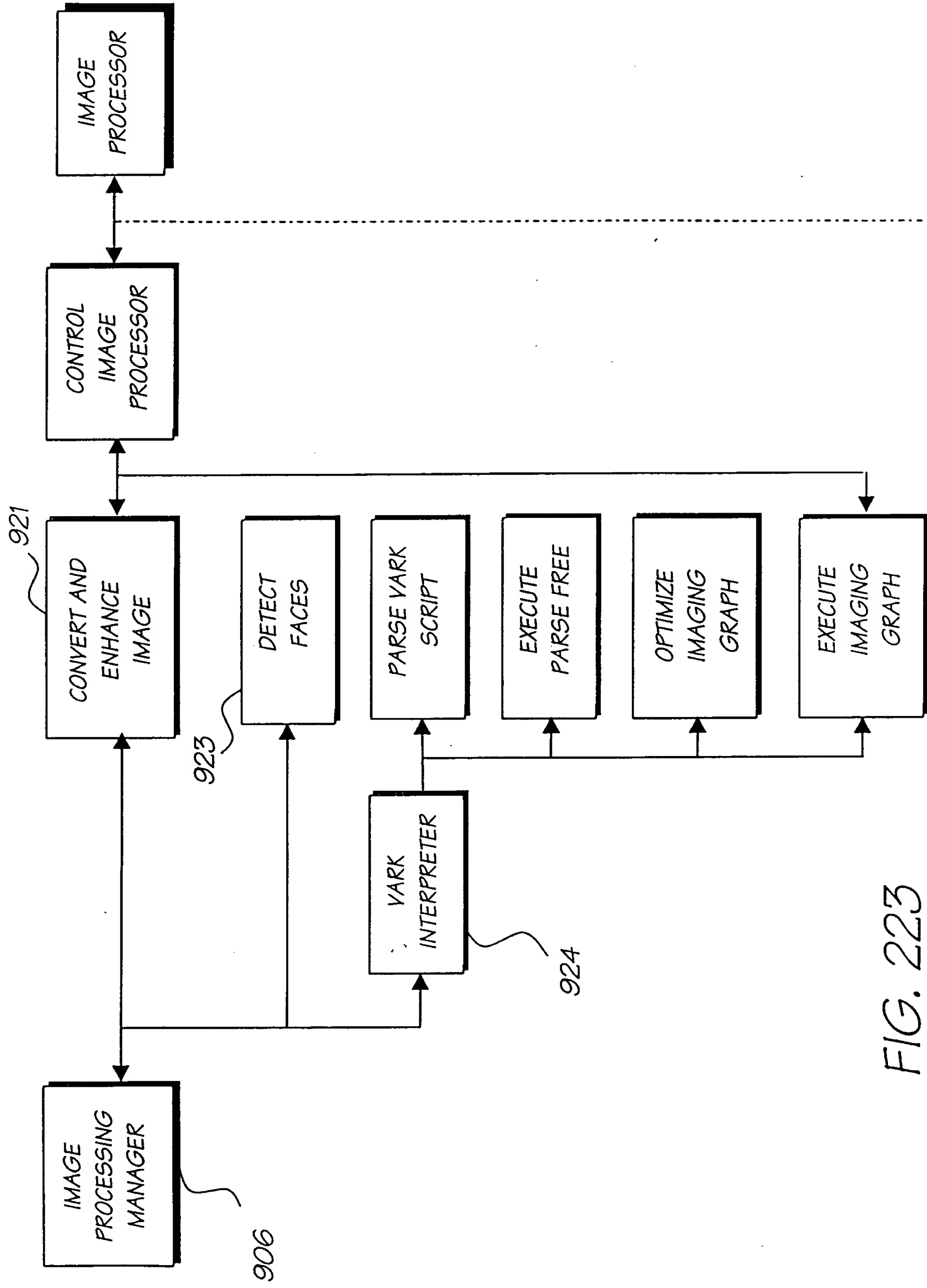


FIG. 223

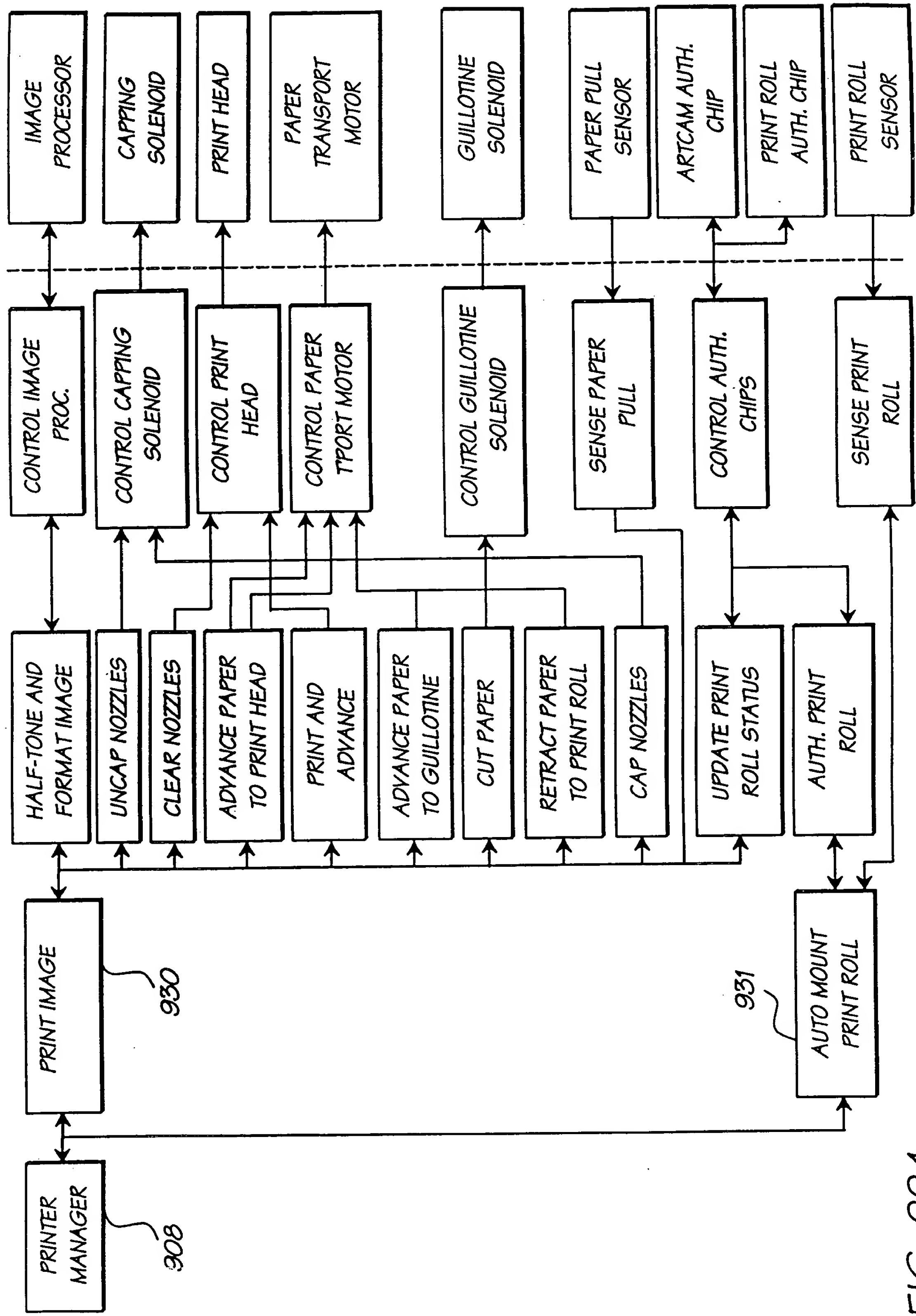


FIG. 224

FIG. 225

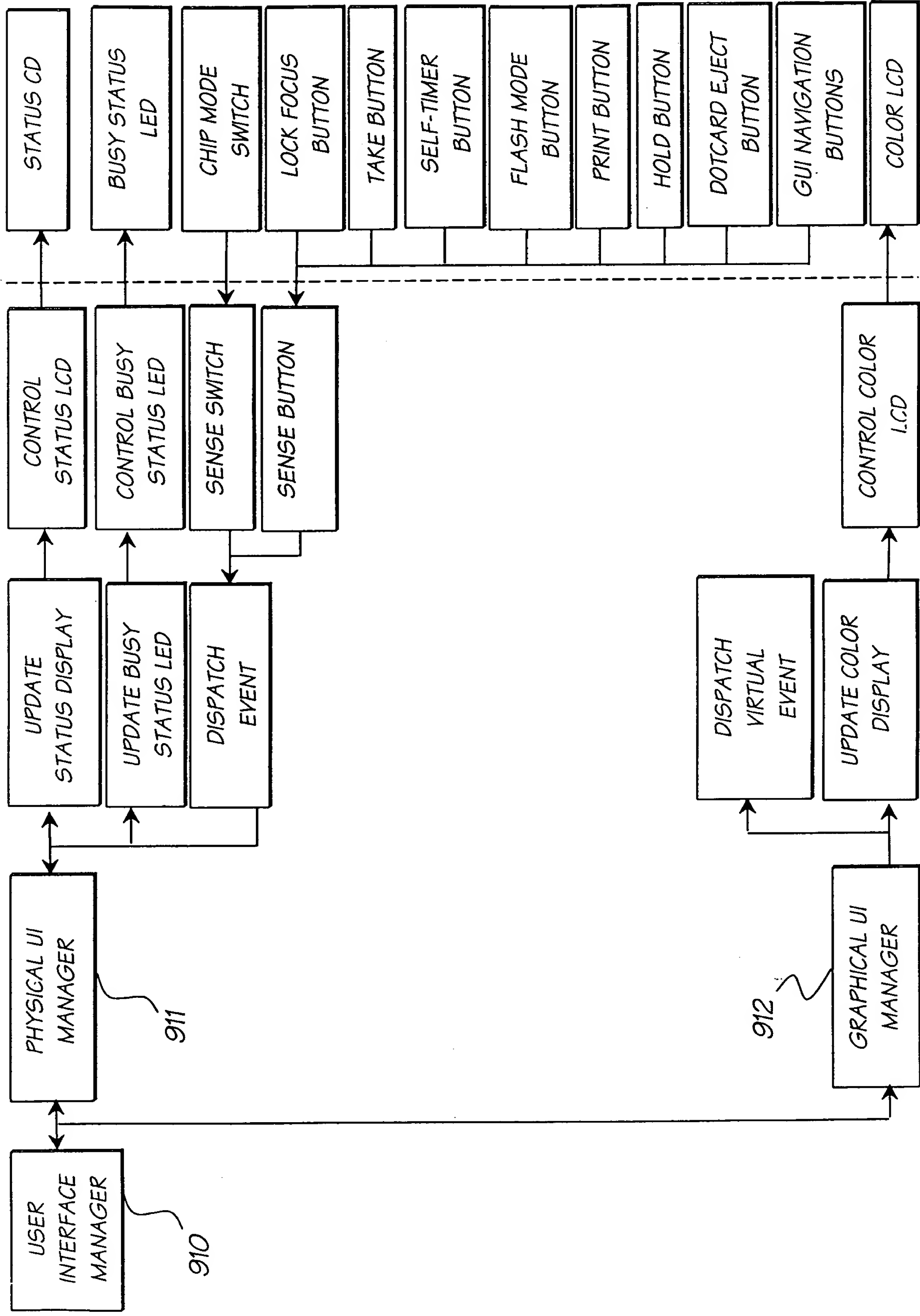


FIG. 225

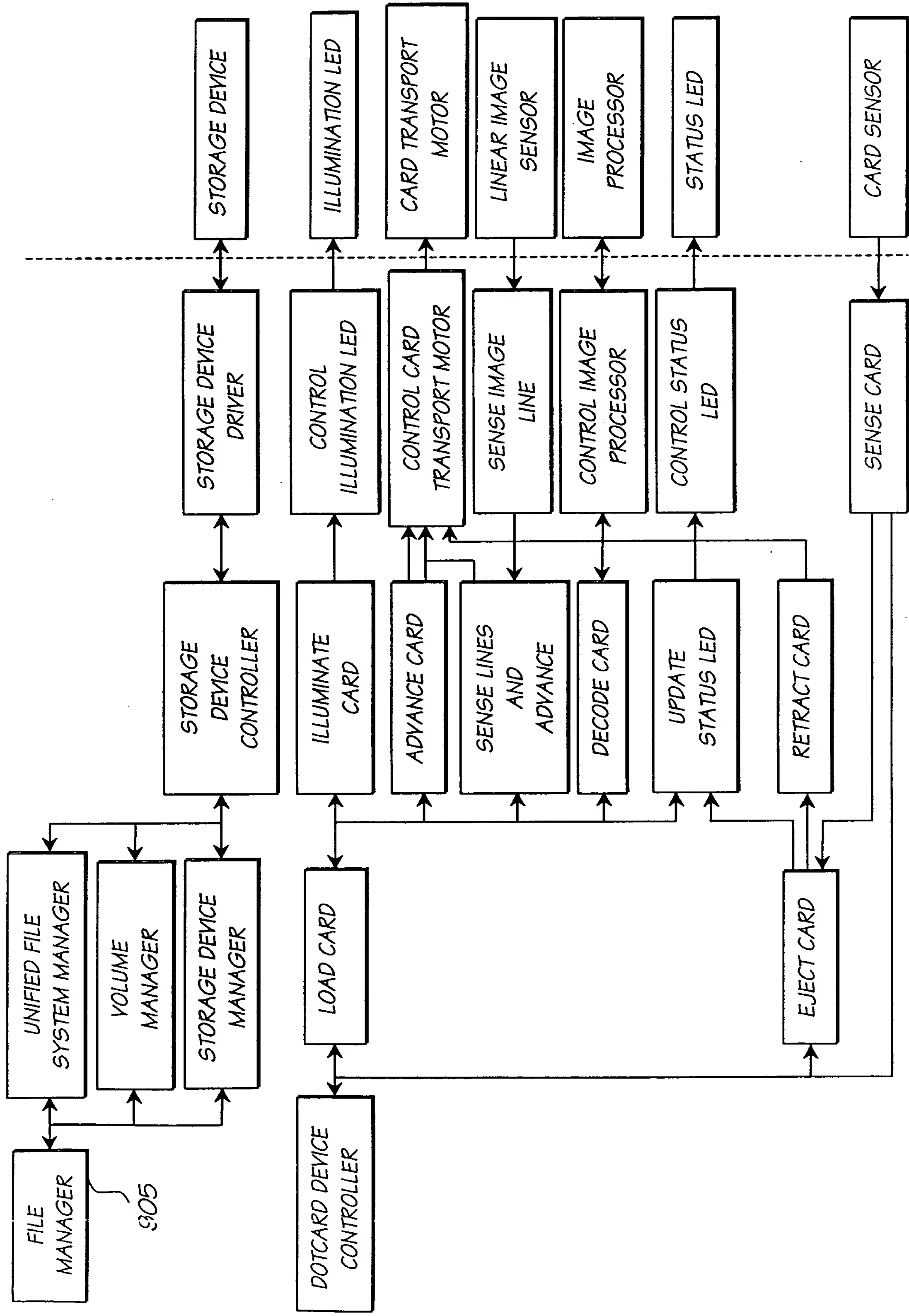


FIG. 226

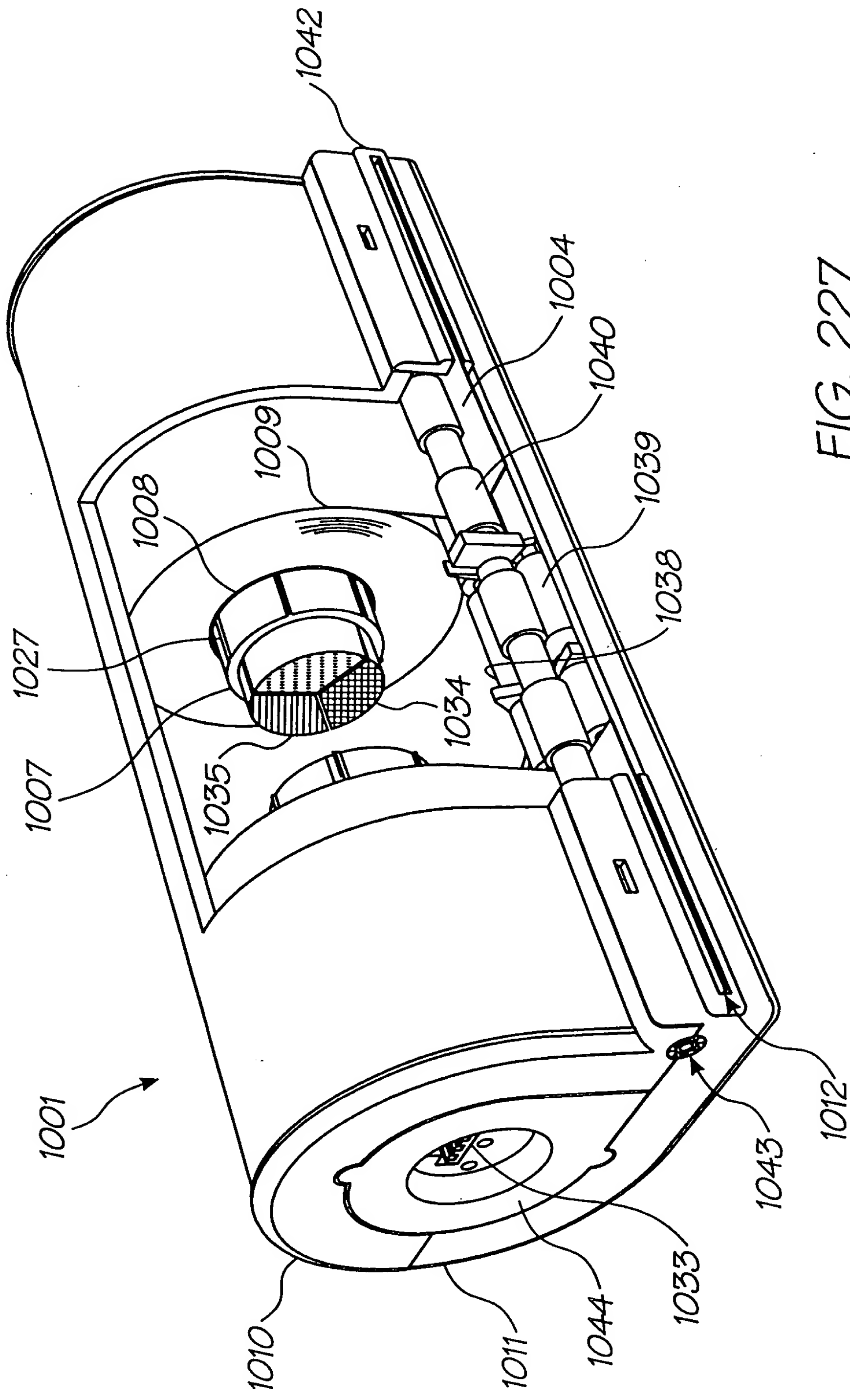


FIG. 227

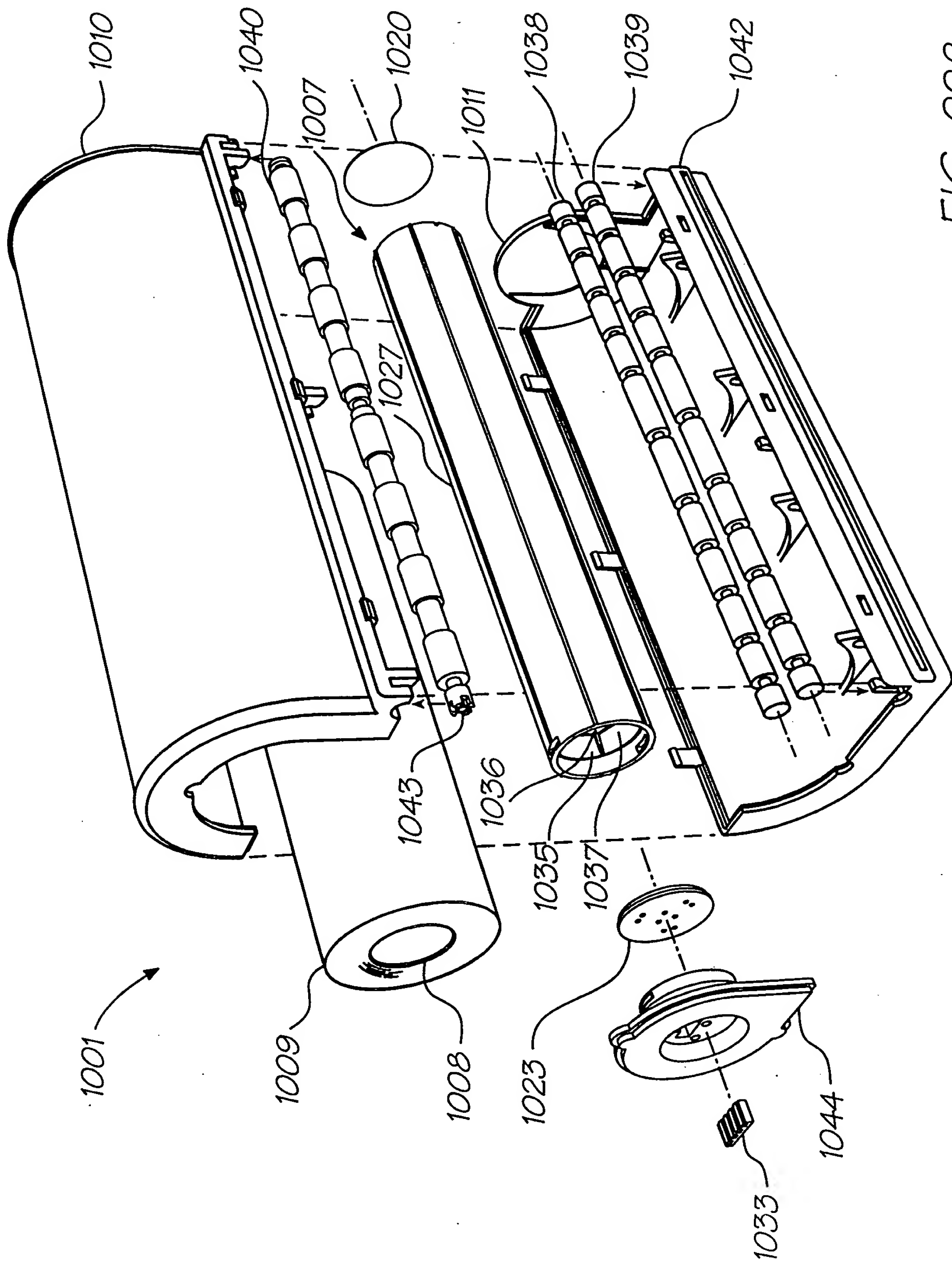


FIG. 228

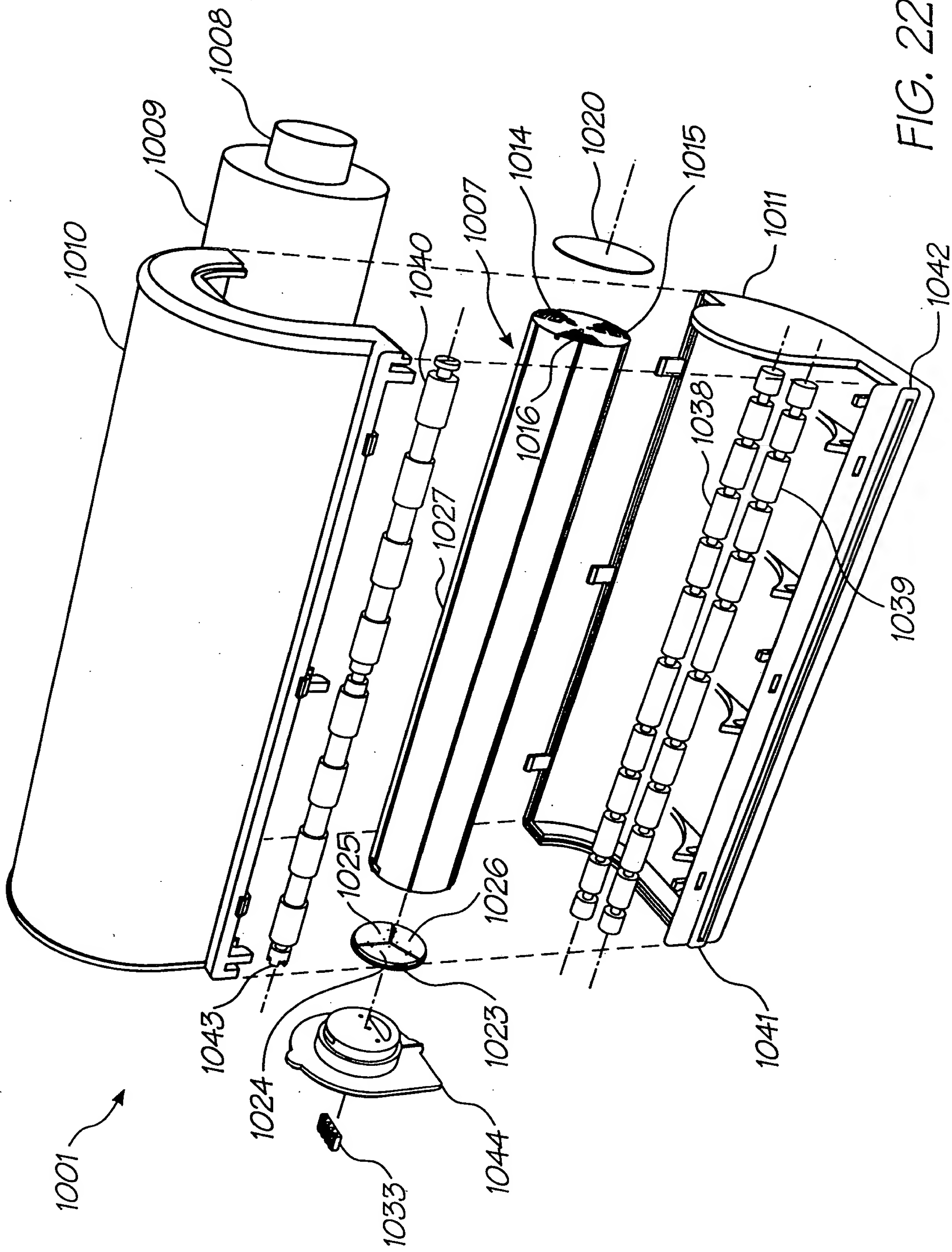


FIG. 229



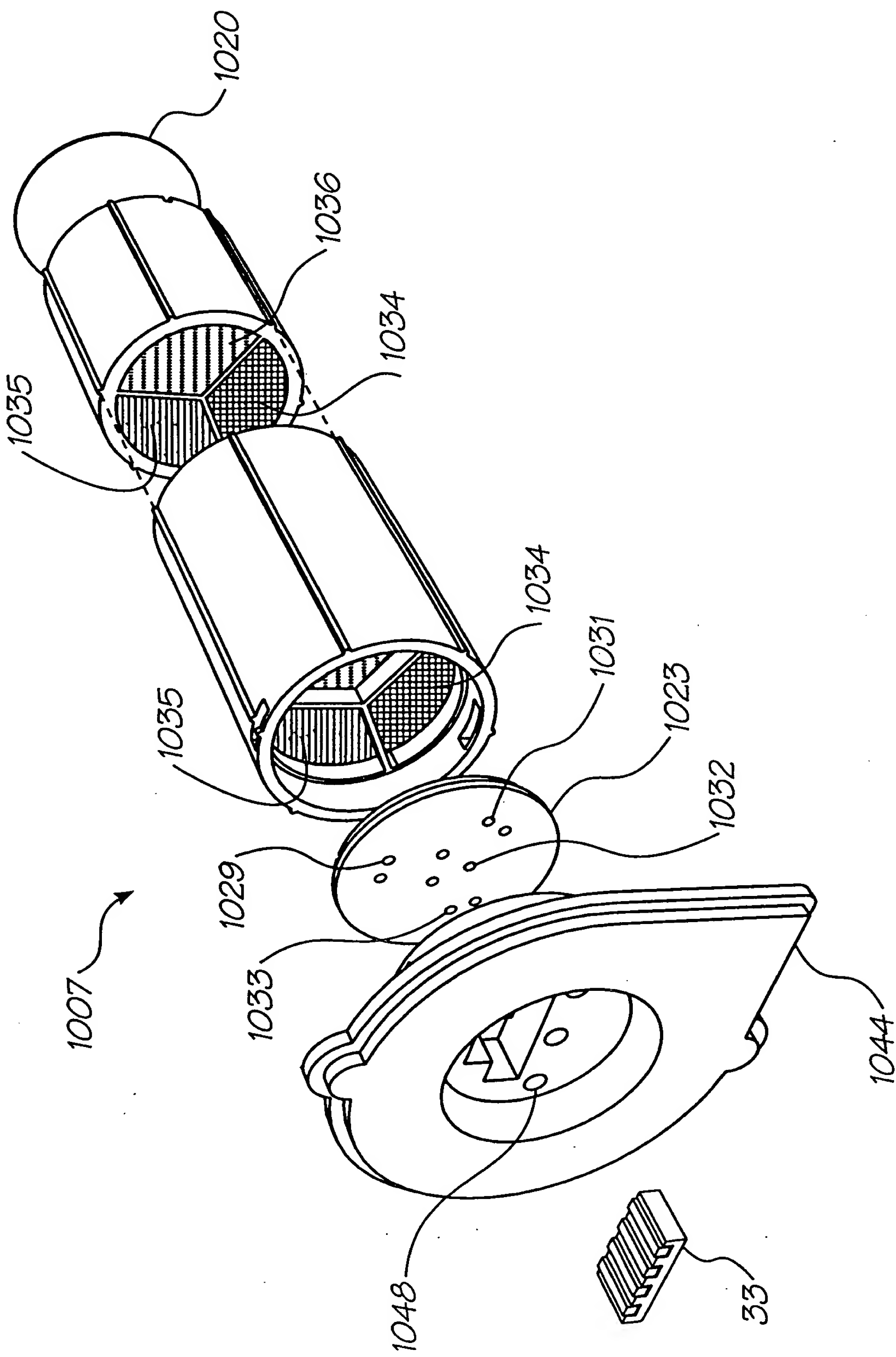


FIG. 230

FIG. 231

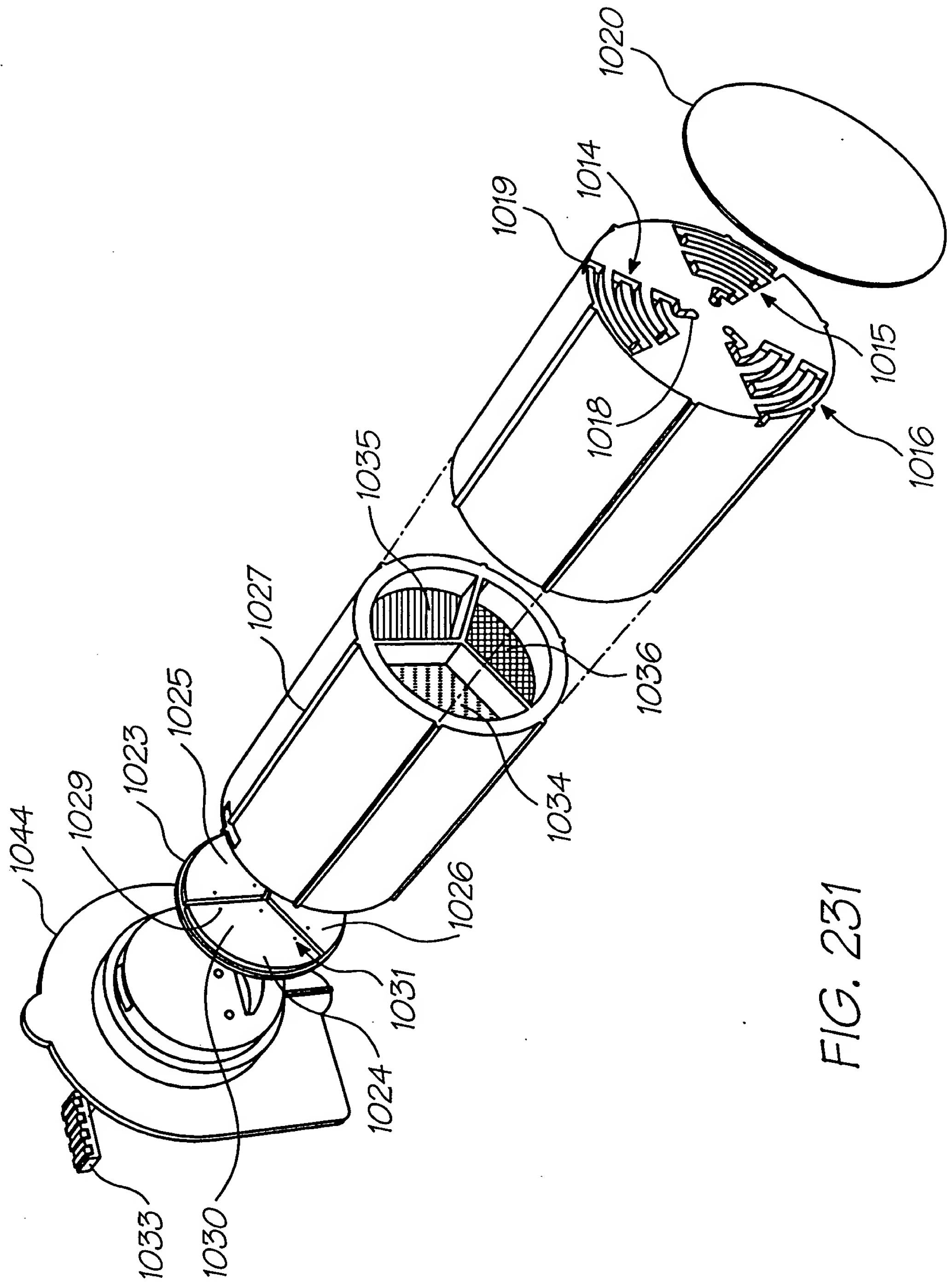


FIG. 231